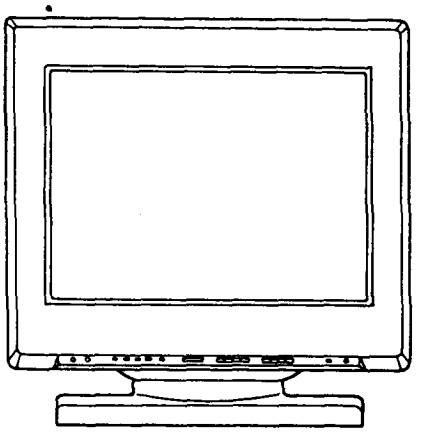
GDM-17SE1T

SERVICE MANUAL

AEP Model
Chassis No. SCC-G24F-A

Multiscan 17*se*



N-1 CHASSIS

SPECIFICATIONS

Picture tube	0.26 mm aperture grill pitch 17 inches measured diagonally (16″ visual) 90-degree deflection
Effective picture size	Approx. 328 × 242 mm (w/h) (13 × 9 5/8 inches)
Resolution	Horizontal: Max. 1280 dots Vertical: Max. 1024 lines
Display picture size	Approx. 293 × 234 mm (w/h) (11 5/8 × 9 1/4 inches) or Approx. 300 × 225 mm (w/h) (11 7/8 × 8 7/8 inches)
Deflection frequency	Horizontal: 31.5 to 82 kHz Vertical: 50 to 150 Hz
AC input voltage/current	100 to 120 V, 50/60 Hz, Max. 2.7 A 220 to 240 V, 50/60 Hz, 1.5 A
Dimensions	406 × 414 × 450 mm (w/h/d) (16 × 16 3/8 × 17 3/4 inches)
Mass	Approx. 22.5 kg (57 lb 5 oz)

Design and specifications are subject to change without notice.

MICROFILM

TRINITRON®
COLOR GRAPHIC DISPLAY
SONY®

POWER SAVING FUNCTION

The unit supports the computers corresponding to the "Power Saving Function".

Power saving operation

- The H sync or V sync is not present.
  ⬇
  The unit goes into suspend mode.

- Both the H sync and V sync are not present.
  ⬇
  The unit goes into active-off mode.

Note

As this unit has the Power Saving Function, if you turn on the unit with no signal input, the unit goes into Power Saving mode and waits for an input signal.

CAUTION

Turn power off and disconnect the power cord when you will disassemble the unit since.

TIMING SPECIFICATION

Mode	1	2	3	4	5	6	7	8	9
Resolution (H x V)	640 x 480	720 x 400	800 x 600	832 x 624	1024 x 768	1024 x 768	1152 x 870	1280 x 1024	1280 x 1024
Dot Clock (MHz)	25.175	28.322	50.000	57.285	75.000	80.000	100.000	110.000	135.000
Horizontal									
Hor. freq. (kHz)	31.469	31.469	48.077	49.727	56.476	60.241	68.681	63.953	78.855
H-total	31.778	31.777	20.800	20,110	17.707	16.600	14.560	15.636	12.681
H-blanking	6.356	6.355	4.800	5.586	4.053	3.800	3.040	4.000	3.200
H-Front porch	0.636	0.636	1.120	0.559	0.320	0.550	0.320	0.727	0.237
H-Sync. width	3.813	3.813	2.400	1.117	1.813	1.200	1.280	1.018	1.067
H-Back porch	1.907	1.907	1.280	3.910	1.920	2.050	1.440	2.255	1.896
H-Active	25.422	25.422	16.000	14.524	13.653	12.800	11.520	11.636	9.481
(μsec)									
Vertical									
Ver. freq. (Hz)	59.940	70.087	72.188	74.553	70.069	74.927	75.062	59.938	74.112
V-total	525	449	666	667	806	804	915	1067	1064
V-blanking	45	49	66	43	38	36	45	43	40
V-Front porch	10	12	37	3	3	3	3	1	0
V-Sync. width	2	2	6	3	6	3	3	5	30
V-Back porch	33	35	23	37	29	30	39	37	10
V-Active	480	400	600	624	768	768	870	1024	1024
(Lines)									
Sync.	External	External	External	Internal	External	Internal	Internal	External	External
H-Polarity	(−)	(−)	(+)	N.A	(−)	N.A	N.A	(−)	(+)
V-Polarity	(−)	(+)	(+)	N.A	(−)	N.A	N.A	(−)	(+)
Scanning mode	Non-interlace	Non-interlace	Non-interlace	Non-interlace	Non-interlace	Non-interlace	Non-interlace	Non-interlace	Non-interlace

WARNING!!

NEVER TURN ON THE POWER IN A CONDITION IN WHICH THE DEGAUSS COIL HAS BEEN REMOVED.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL FOR SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

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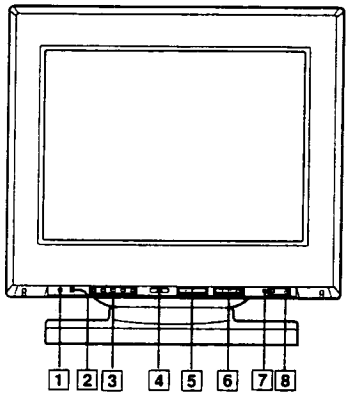
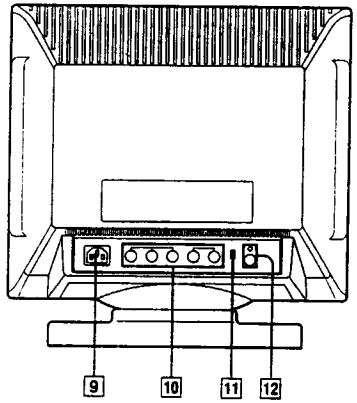
Function of Controls





1 RESET button
Press to reset the adjustment data to the factory-preset levels for the input signal being received.

2 CTRL (control) button
To reset all the adjustment data to the factory-preset levels, press the RESET button 1 while holding down this button.

3 Indicator
The indicator corresponding to the item selected with the SELECT button 4 lights up.
CENT: Centering
SIZE: Picture size
GEOM: Picture tilt/Horizontal pincushion
CONV: Convergence
C TEMP: Color temperature

4 SELECT button
Press to select an item.
Hold down for more than one second until an indicator lights up, then press repeatedly to select an item 3.

5 ☼ (brightness) buttons
Press + or – to adjust the picture brightness.
When an item is selected, use these buttons to adjust the picture size and centering in the vertical direction and the picture tilt.

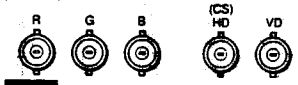
6 ◑ (contrast) buttons
Press + or – to adjust the picture contrast.
When an item is selected, use these buttons to adjust the picture size and centering in the horizontal direction, the horizontal pincushion and the colour temperature.

7 POWER SAVING indicator
Lights up when the monitor is in Power Saving Mode. Blinks when you reached the limit of the adjustable range or while in resetting mode.

8 ⏻ power switch and indicator
Press to turn the monitor on or off. The indicator lights up when the monitor is turned on. To disconnect the power supply, disconnect the AC power cord.

9 AC IN connector
Plug in an AC power cord.

10 Video input connector (5 BNC)
The connector accepts RGB video signals (0.714 Vp-p, positive).



Note

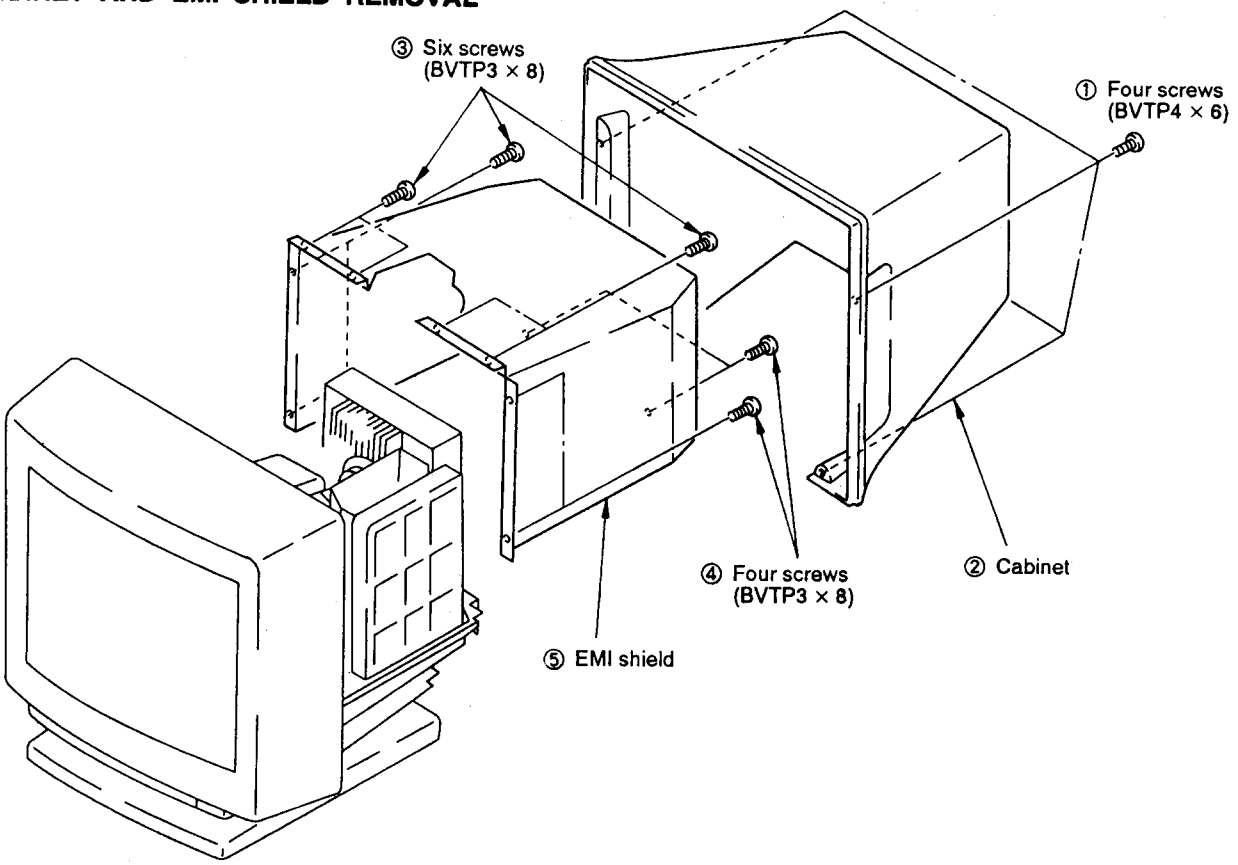
If you use a computer or video board of high output level (about 1.0 Vp-p), you may not be able to obtain the optimum display. In such case, try decreasing the picture contrast, or use a computer or video board with a lower output level.

11 75 Ω/2 kΩ selector
Switches the impedance of the video input connector 10 termination to 75 Ω or to 2 kΩ.

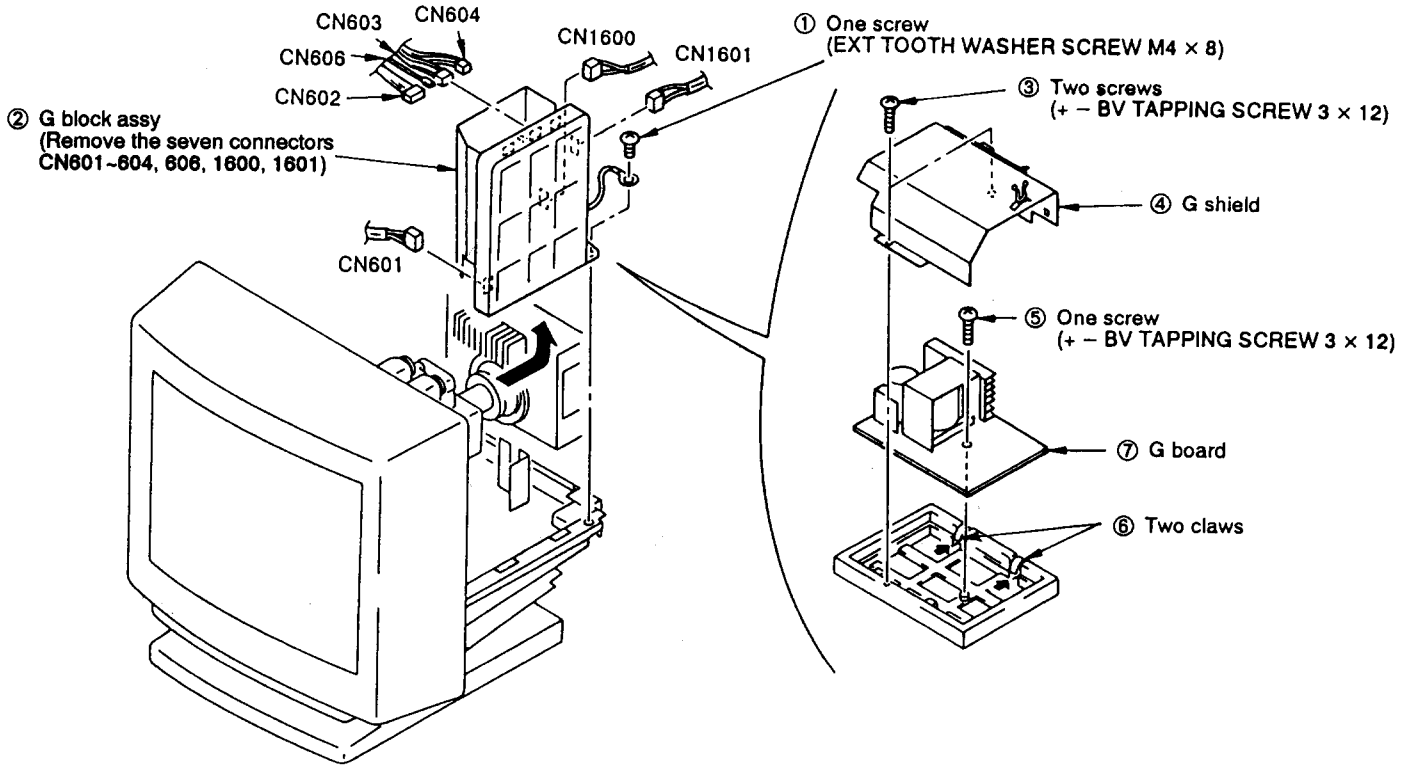
12 SERVICE button and terminal
The button and the terminal are to be used by service personnel only.

SECTION 1
DISASSEMBLY

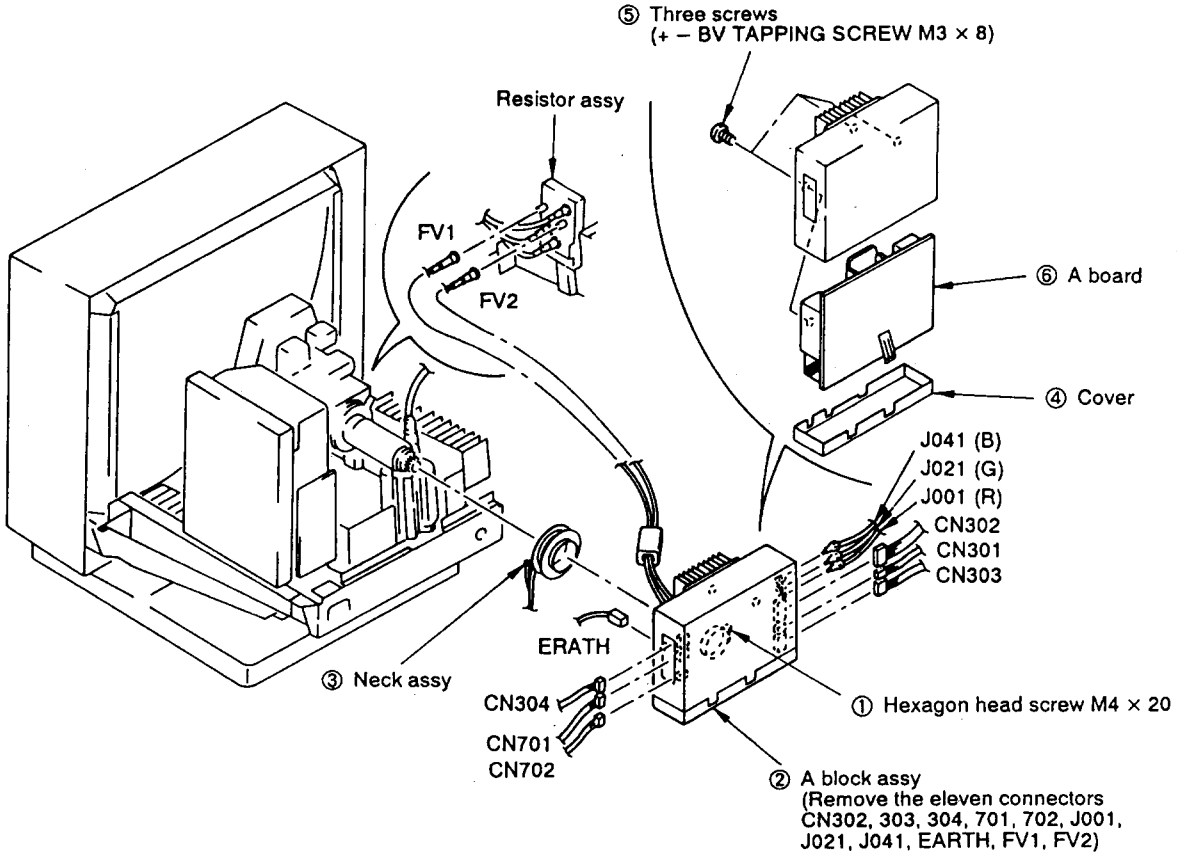
1-1. CABINET AND EMI SHIELD REMOVAL



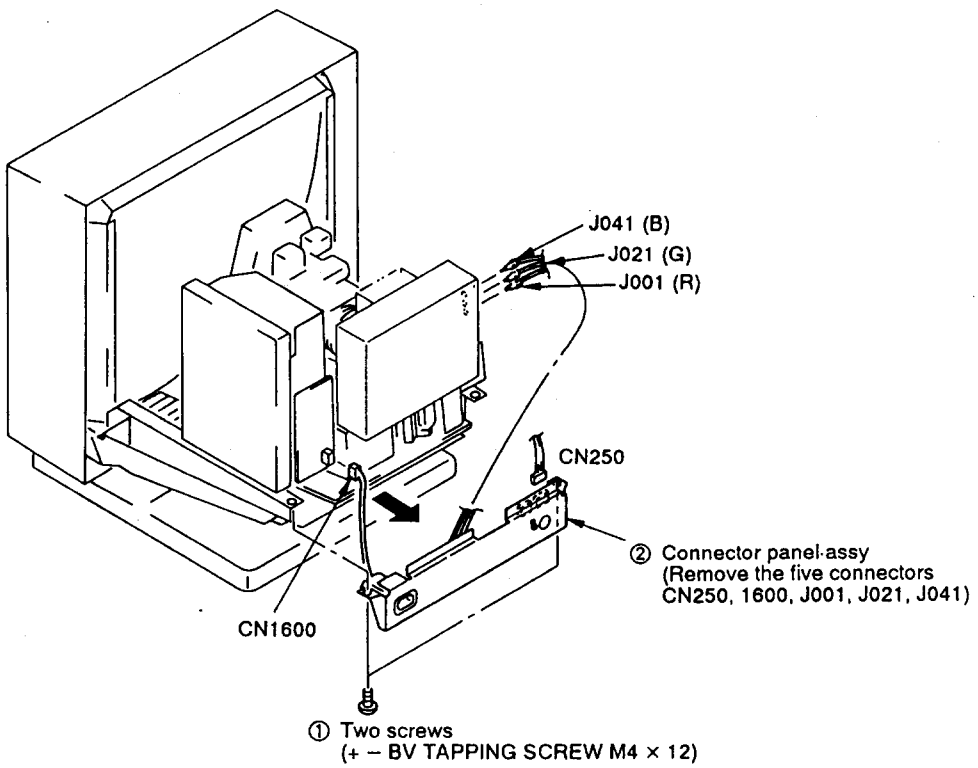
1-2. G BLOCK ASSY REMOVAL



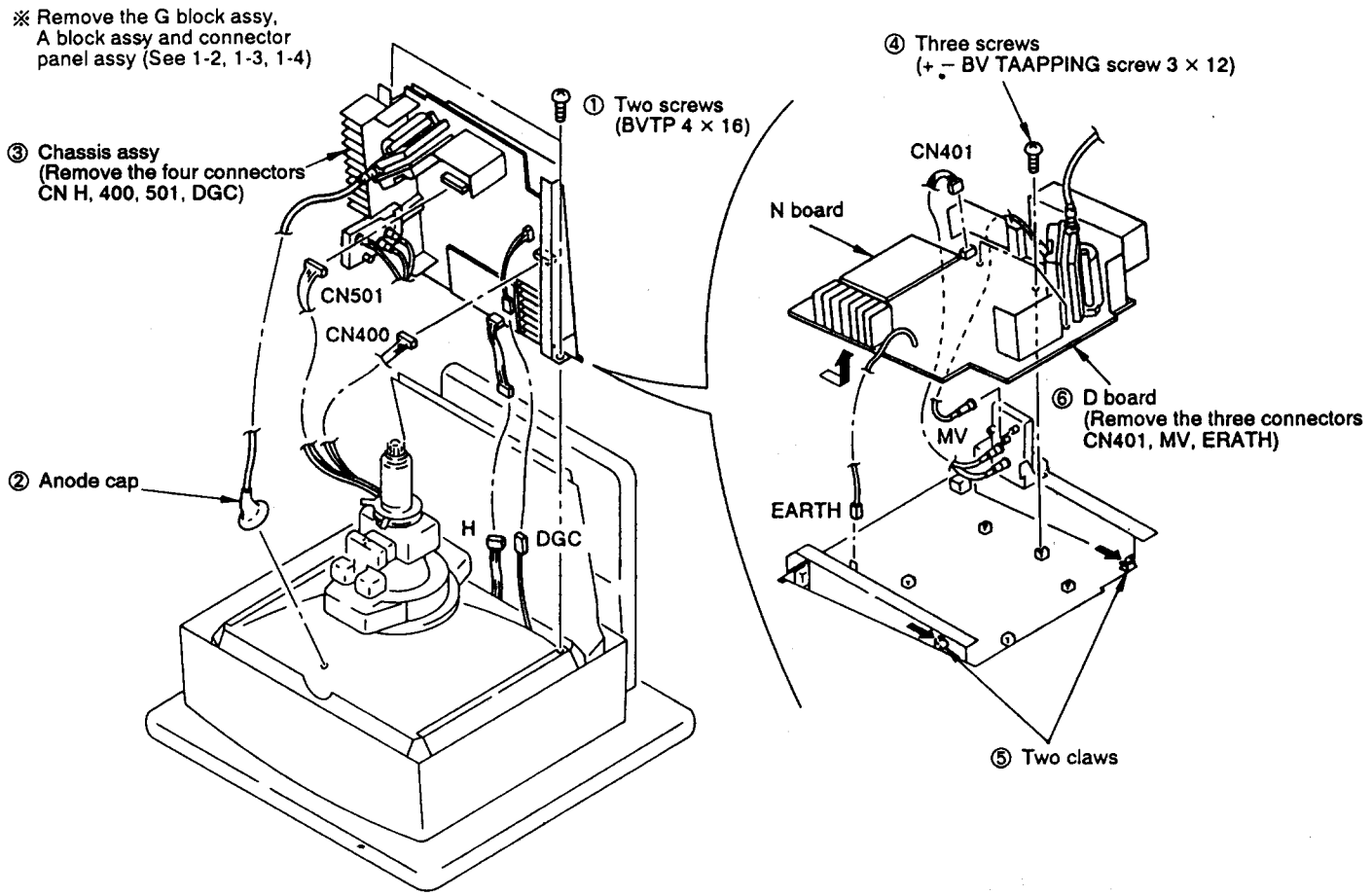
1-3. A BLOCK ASSY REMOVAL



1-4. CONNECTOR PANEL ASSY REMOVAL

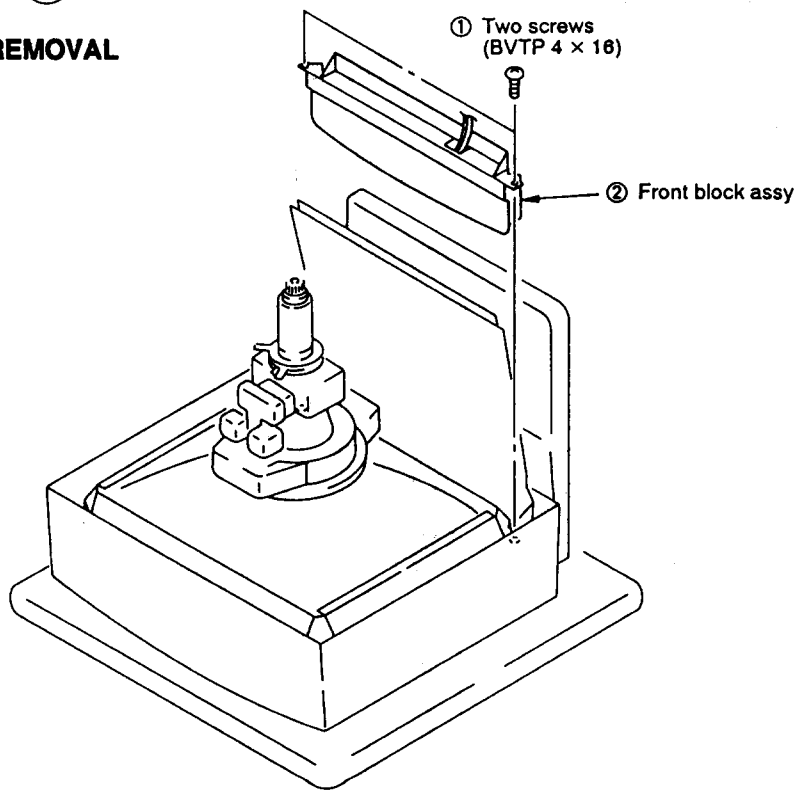


1-5. CHASSIS ASSY REMOVAL

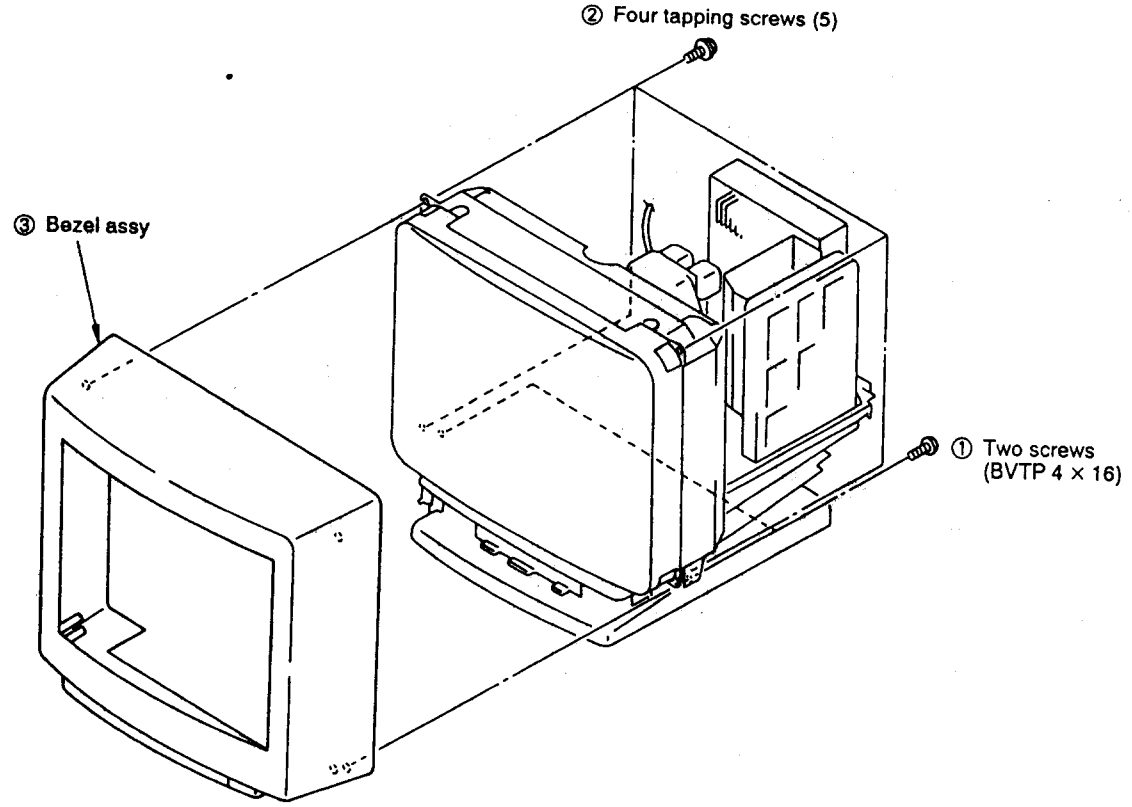

※ Remove the G block assy, A block assy and connector panel assy (See 1-2, 1-3, 1-4)
① Two screws (BVTP 4 × 16)
③ Chassis assy (Remove the four connectors CN H, 400, 501, DGC)
CN501
CN400
② Anode cap
H
DGC
④ Three screws (+ – BV TAAPPING screw 3 × 12)
CN401
N board
⑥ D board (Remove the three connectors CN401, MV, ERATH)
MV
EARTH
⑤ Two claws

1-6. FRONT BLOCK ASSY REMOVAL

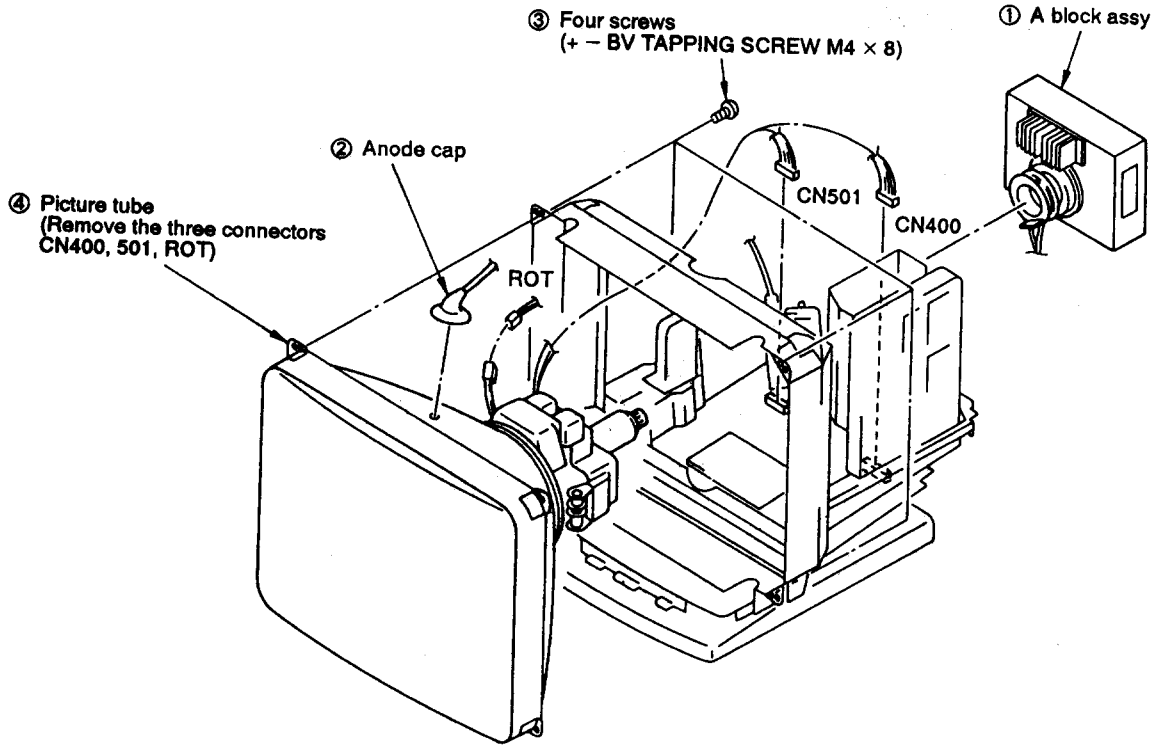
※ Remove the chassis assy (See 1-5)



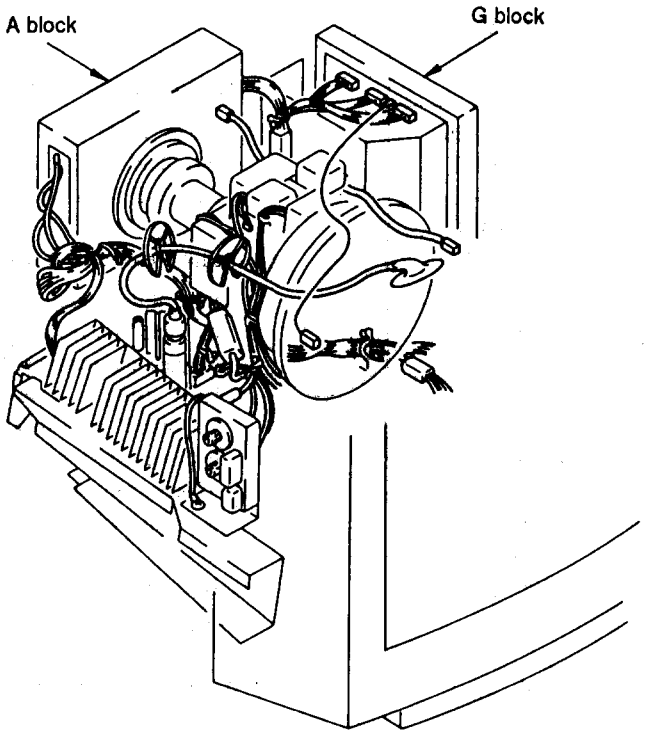
1-7. BEZEL ASSY REMOVAL



1-8. PICTURE TUBE REMOVAL



1-9. WIRING HARNESS LAYOUT



SECTION 2
SAFETY RELATED ADJUSTMENT

When replacing or repairing the shown below table, the following operational checks must be performed as a safety precaution against X-rays emissions from the unit.

HV Regulator Circuit Check	D board------ IC804, T800 • Mounted D board
HV. Hold-Down Circuit Check	D board------ IC804, R826, R832, R842, R843, T800 • Mounted D board
Beam Current Protector Circuit Check	D board------ IC804, T800 • Mounted D board
B+ Regulator Circuit Check	G board------ IC602, IC603, R630 • Mounted G board • Power Supply Block
OVP Circuit Check	G board------ D620, R631, R633, R635, Q610 • Mounted G board • Power Supply Block

a) HV Regulator Check

1) Input a white dot signal and set the contrast and bright to the minimum level.

check point
pin ② of CN801, 9.00 $^{+0.05}_{-0.06}$ VDC

b) HV Hold-Down Check

1) Check if the raster disappears when the voltage less than 8.80 VDC is applied between pin ⑤ of CN801 and GND from the external power source.

c) Beam Protector-1 and Protector-2 Check

1) Record the initial value of ABL-SHUTDOWN, input the "255" for resistor value.
2) Reduce the resistance gradually from the maximum level using a variable resistor of more than 12 [K-ohm] and an ampermeter connected in series between pin ① of CN801 and GND.
3) Check that the protector circuit operates to disappear the raster when the current level drops less than 1.36 mA.
4) Back the value of ABL-SHUTDOWN to the initial regulation value.

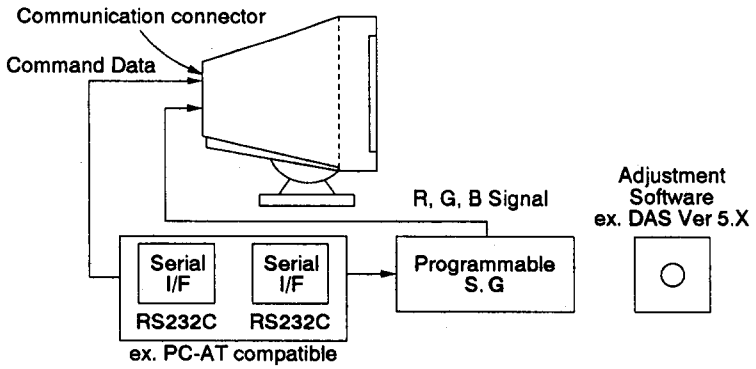
d) B+ Regulator Circuit Check

1) Input a white dot signal and set the contrast and bright to the minimum level.

check point
pin ① of CN602, 144.0 ± 3 VDC

SECTION 3
ADJUSTMENTS

Connect the communication cable of the computer (ex. PC-AT) to the connecter located on the rear side of the monitor. Run the service software and then follow the instruction.



- **White Balance Adjustment Specification (With HSI function)**

Adjustments Procedure	Input signal	Value of CONT, BRT	Adjust point	Specification
Color mode 4 (NDX=3)				
1	Glay	CONT-255, BRT-110	G2	Green become starting to be visible
2	ALL Black	BRT-255, CONT-0	R. CUT MAX, G. CUT MAX, B. CUT MAX	0.283 ± 0.010, 0.298 ± 0.010 (x, y) Y=3 ± 0.5 cd/m²
3	ALL White	BRT-80, CONT-255, G. CUT MIN * Note 1	G-DRV	Y=95 ± 1 cd/m²
4	Glay	BRT-80, CONT-255	R. CUT MIN, B CUT MIN R-DRV, B-DRV * Note 2	0.283 ± 0.010, 0.298 ± 0.010 (x, y)
5	ALL White	BRT-80, CONT-255	R-DRV, B-DRV, CONT MAX/BRT MAX * Note 3	0.283 ± 0.010, 0.298 ± 0.010 (x, y) Y=115 ± 1 cd/m²
6	ALL White	BRT-80, CONT-0	CONT MIN/BRT MAX, CONT MIN/BRT MIN	Y=8 ± 1 cd/m²
7	ALL White	BRT-255, CONT-255	CONT MAX/BRT MAX	Less than 150 cd/m²
8		BRT-80		Color Save
Color mode 1 (NDX=0)				
1				Copy all data of mode 4
2	ALL Black	BRT-255, CONT-0	R. CUT MAX. G. CUT MAX B. CUT MAX	0.313 ± 0.010, 0.329 ± 0.010 (x, y) Y=3 ± 0.5 cd/m²
3	Glay	BRT-80, CONT-255, G. CUT MIN * Note 1	R. CUT MIN, B CUT MIN	0.313 ± 0.010, 0.329 ± 0.010 (x, y)
4	ALL White	BRT-80, CONT-255	R-DRV, B-DRV, CONT MAX/BRT MAX * Note 4	0.313 ± 0.010, 0.329 ± 0.010 (x, y) Y=100 ± 1 cd/m²
5	ALL White	BRT-80, CONT-0	CONT MIN/BRT MIN, CONT MIN/BRT MAX	Y=8 ± 1cd/m²
6	ALL White	BRT-255, CONT-255	CONT MAX/BRT MAX	Less than 150 cd/m²
7		BRT-80		Color Save

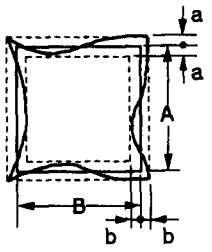
– Continued on next page –

Adjustments Procedure	Input signal	Value of CONT, BRT	Adjust point	Specification
Color mode 2 (NDX=1)				
1				Copy all data of mode 4
2	ALL Black	BRT-255, CONT-0	R. CUT MAX, G. CUT MAX, B. CUT MAX	0.363 ± 0.010, 0.329 ± 0.010 (x, y) Y=3 ± 0.5 cd/m²
3	Glay	BRT-80, CONT-255, G. CUT MIN * Note 1	R. CUT MIN, B CUT MIN	0.363 ± 0.010, 0.329 ± 0.010 (x, y)
4	ALL White	BRT-80, CONT-255	R-DRV, B-DRV, CONT MAX/BRT MAX * Note 3	0.363 ± 0.010, 0.329 ± 0.010 (x, y) Y=70 ± 1 cd/m²
5	ALL White	BRT-80, CONT-0	CONT MIN/BRT MIN, CONT MIN/BRT MAX	Y=8 ± 1 cd/m²
6	ALL White	BRT-255, CONT-255	CONT MAX/BRT MAX	Less than 150 cd/m²
7		BRT-80		Color Save
Color mode 3 (NDX=2)				
1				Copy all data of mode 4
2	ALL Black	BRT-255, CONT-0	R. CUT MAX, G. CUT MAX, B. CUT MAX	0.307 ± 0.010, 0.378 ± 0.010 (x, y) Y=3 ± 0.5 cd/m²
3	Glay	BRT-80, CONT-255, G. CUT MIN * Note 1	R. CUT MIN, B CUT MIN	0.307 ± 0.010, 0.378 ± 0.010 (x, y)
4	ALL White	BRT-80, CONT-255	R-DRV, B-DRV, CONT MAX/BRT MAX * Note 3	0.307 ± 0.010, 0.378 ± 0.010 (x, y) Y=110 ± 1 cd/m²
5	ALL White	BRT-80, CONT-0	CONT MIN/BRT MIN, CONT MIN/BRT MAX	Y=8 ± 1 cd/m²
6	ALL White	BRT-255, CONT-255	CONT MAX/BRT MAX	Less than 150 cd/m²
7		BRT-80,		Color Save
Data of MON CON REG 1 shall be set to "128"				
1		NDX=1 (9300K)	Input data HUE=168, SAT=255, then Color Save	
2		NDX=2 (6500K)	Input data HUE=0, SAT=0, then Color Save	
3		NDX=3 (5000K)	Input data HUE=17, SAT=218, then Color Save	
4		NDX=1	Service Save	

Note 1: $\frac{110 \times 255\text{-}80 \times (\text{G. CUT MAX Value})}{175}$

Note 2: Same value as G-DRV (first setting)
Note 3: Return to 4 for tracking
Note 4: Return to 3 for tracking

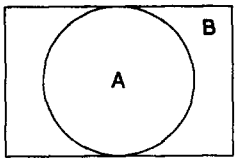
• Vertical and Horizontal Position and Size Specification



a < 2.4 mm
b < 2.4 mm

mode	A	B
16 × 12 16 × 10	300	225
20 × 16	293	234

• Convergence Specification



A ≦ 0.30 mm
B ≦ 0.30 mm

• Geometric Adjustment Methods (All BUS cont)

1. V-CENT ADJ
2. V-SIZE ADJ
3. V-KEY ADJ
4. V-LIN BALANCE ADJ
5. V-LIN.ADJ
6. H-CENT ADJ
7. H-POSI ADJ
8. H-SIZE ADJ
9. KEY BALANCE ADJ
10. KEY ADJ
11. SIDE PIN BALANCE ADJ
12. PIN AMP ADJ
13. S-LINE ADJ
14. SEXY-LINE ADJ

SECTION 4
TROUBLESHOOTING

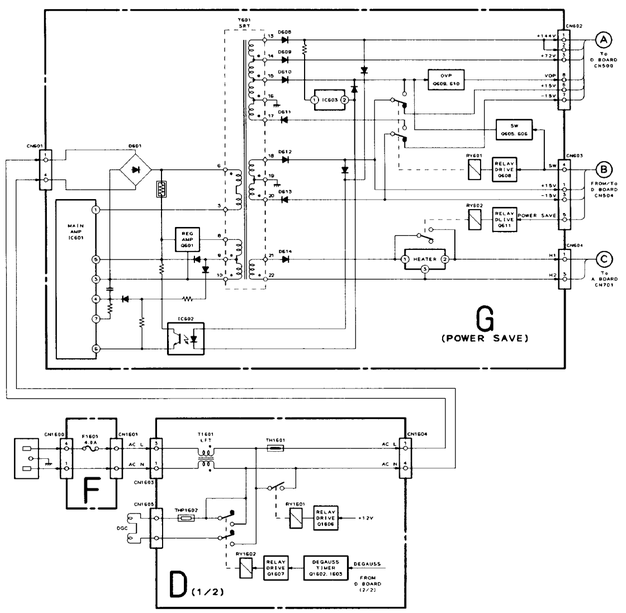
This diagnostic troubleshooting guide uses the monitor symptom as a clue for selecting a repair procedure. Select the listed symptom closest to that of your monitor and follow the procedure given for that symptom in this troubleshooting guide. If the same trouble recurs even after you have changed a block or part, re-install the original block or part, then proceed to the next step.

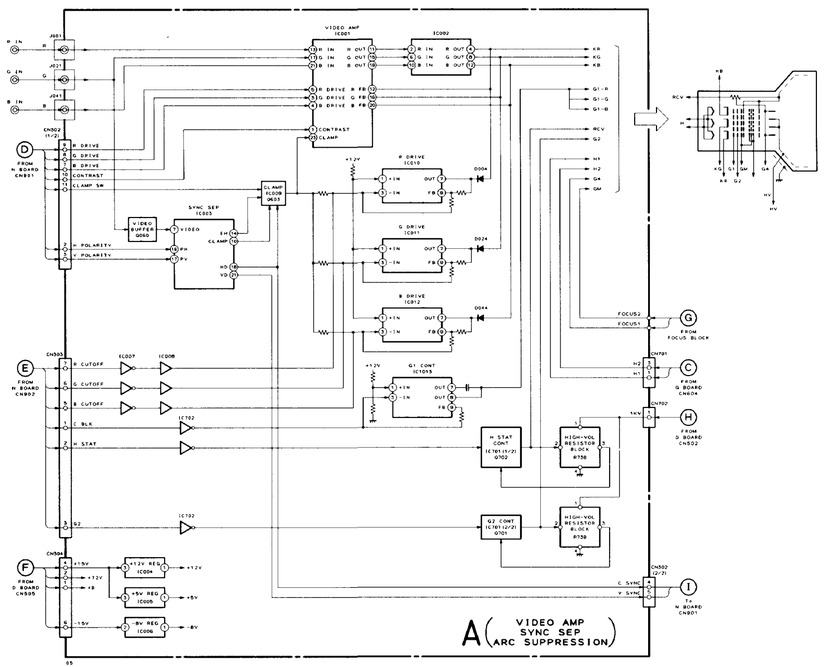
Symptoms	Repair Procedure
• No Power	1. Check whether the internal power supply connector is connected. 2. Inspect the power supply fuse. → If it has blown, change it. If it blows again, proceed to the next step. 3. Charge the Power block. 4. Change the D board block.
• Sametime shutdown after work while	1. Check the hold down voltage. 2. Change the hight voltage capacitor. C805 3. Change the D board block.
• Abnormal coil demagnetization	1. Change the Power block.
• No Picture	1. Adjust the CONTRAST control. 2. Confirm the input signal. 3. Confirm connector between power block and D board. 4. Inspect the power supply fuse. → If it has blown, change it. If it blows again, proceed to the next step. 5. Change the Power block. 6. Change the D board block. 7. Change the A board. 8. Change the U board. 9. Change the CRT.
• Display area too small/large/short/tall/ narrow/wide	1. Adjust the horizontal or vertical size. 2. Change the D board block.
• Horizontal distortion	1. Re-adjust using the service software. 2. Change the D board block.
• Vertical distortion	1. Re-adjust using the service software. 2. Change the D board block.
• Picture tilted	1. Make the tilt adjustment.
• Picture flickers	1. Check the fastening of the ground line. 2. Check the grounding of the connected computer. 3. Change the D board Block.
• Brightness can not be adjusted	1. Change the A board. 2. Change the H board.
• Contrast can not be adjusted	1. Change the A board. 2. Change the H board.
• Picture too bright/dark	1. Adjust the BRIGHTNESS control. 2. Adjust the white balance. 3. Adjust the CONTRAST and BRIGHT controls. 4. Change the A board. 5. Change the Power block. 6. Change the CRT.

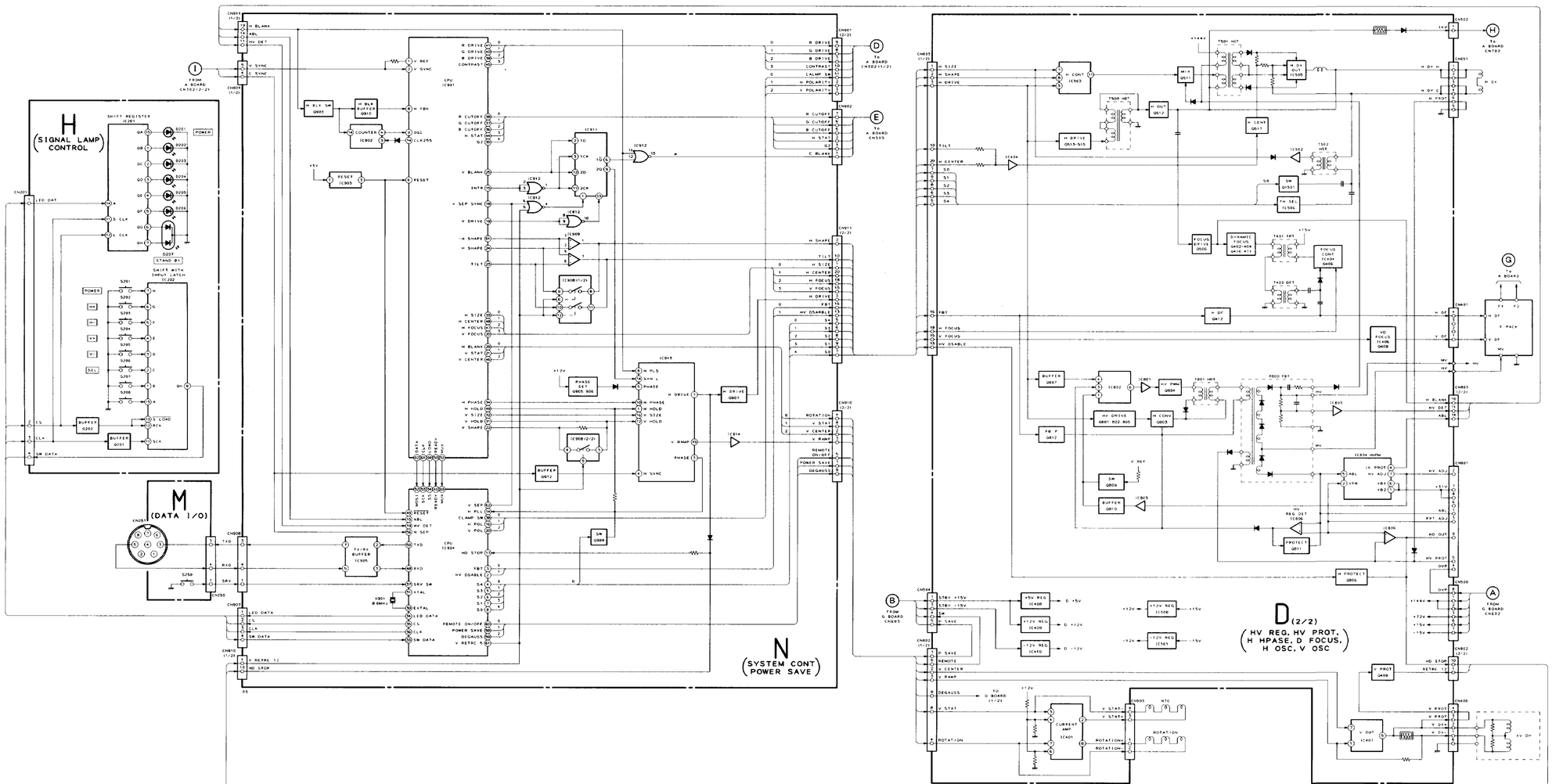
For picture size, pictuer distortion, and other specifications, place the ball chart on the set and check and adjust.

SECTION 5
DIAGRAMS

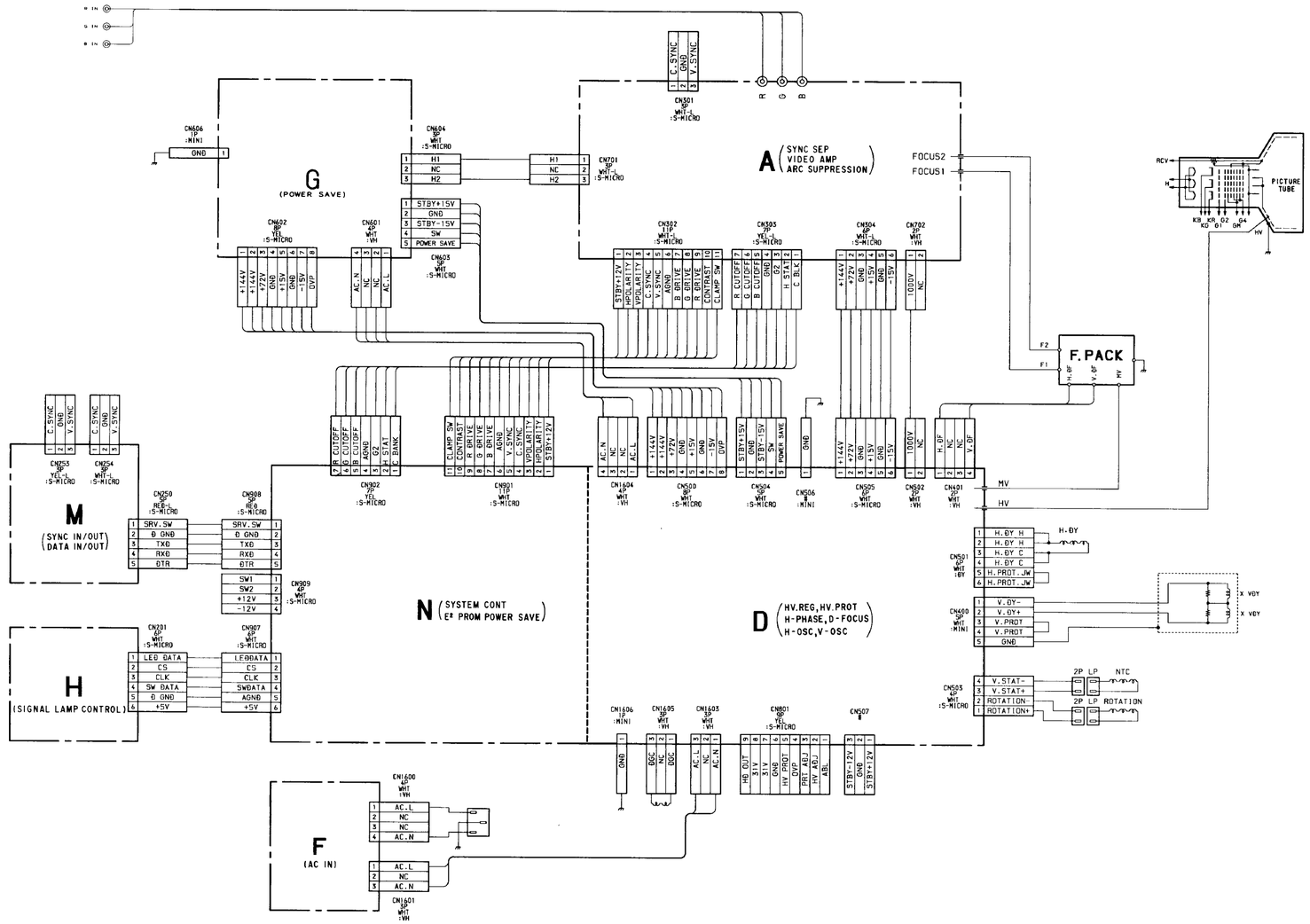
5-1. BLOCK DIAGRAMS



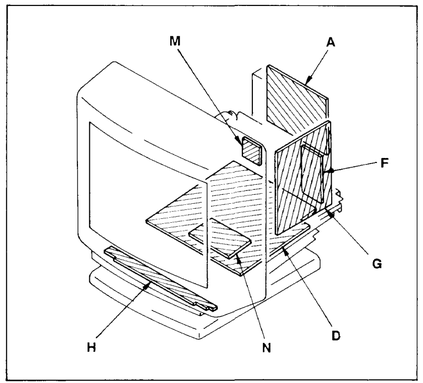



H
(SIGNAL LAMP CONTROL)
M
(DATA I/O)
N
(SYSTEM CONT
POWER SAVE)
D(2/2)
(HV REG, HV PROT,
H HPASE, D FOCUS,
H OSC, V OSC

5-2. FRAME SCHEMATIC DIAGRAM



5-3. CIRCUIT BOARDS LOCATION



5-4. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytic.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

  Pitch: 5 mm
  Rating electrical power 1/10 W (D and G board only 1/4 W)

- All resistors are in ohms.
- : nonflammable resistor.
- : fusible resistor.
- : internal component.
- : panel designation, and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : earth-ground.
- : earth-chassis.
- All voltages are in V.
- Readings are taken with a 10 MΩ digital multimeter.
- Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal production tolerances.
- * : Can not be measured.
- Circled numbers are waveform references.
- : B + bus.
- : B - bus.

Reference information

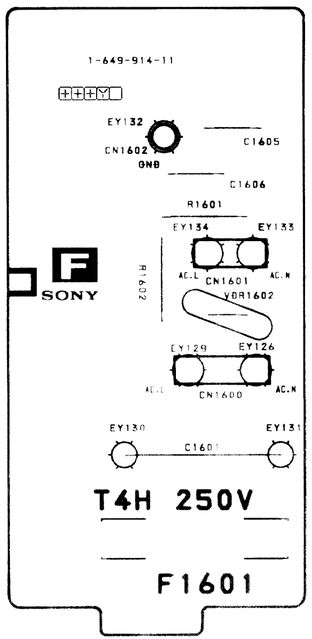
RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RW	NONFLAMMABLE WIREWOUND
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

F [AC IN]

– F Board –



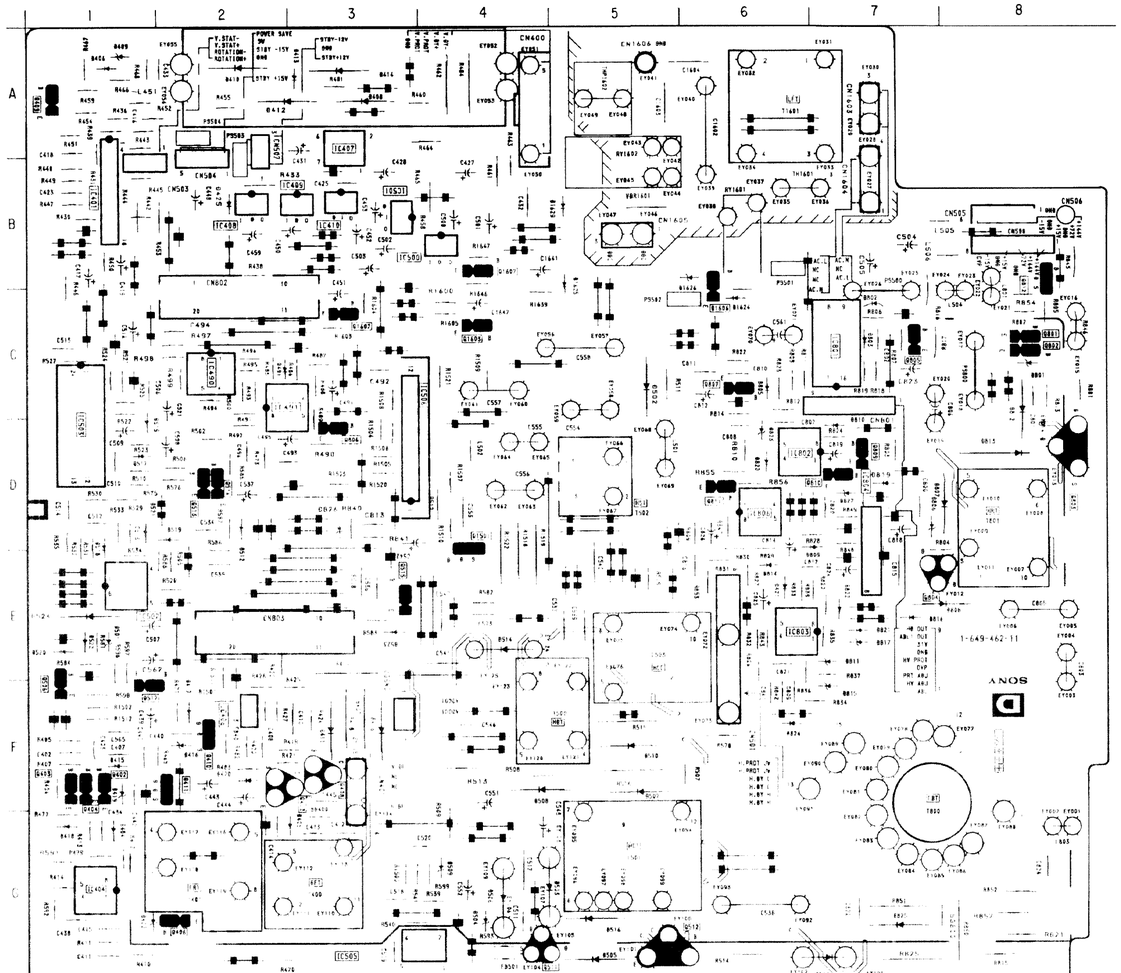
• D BOARD

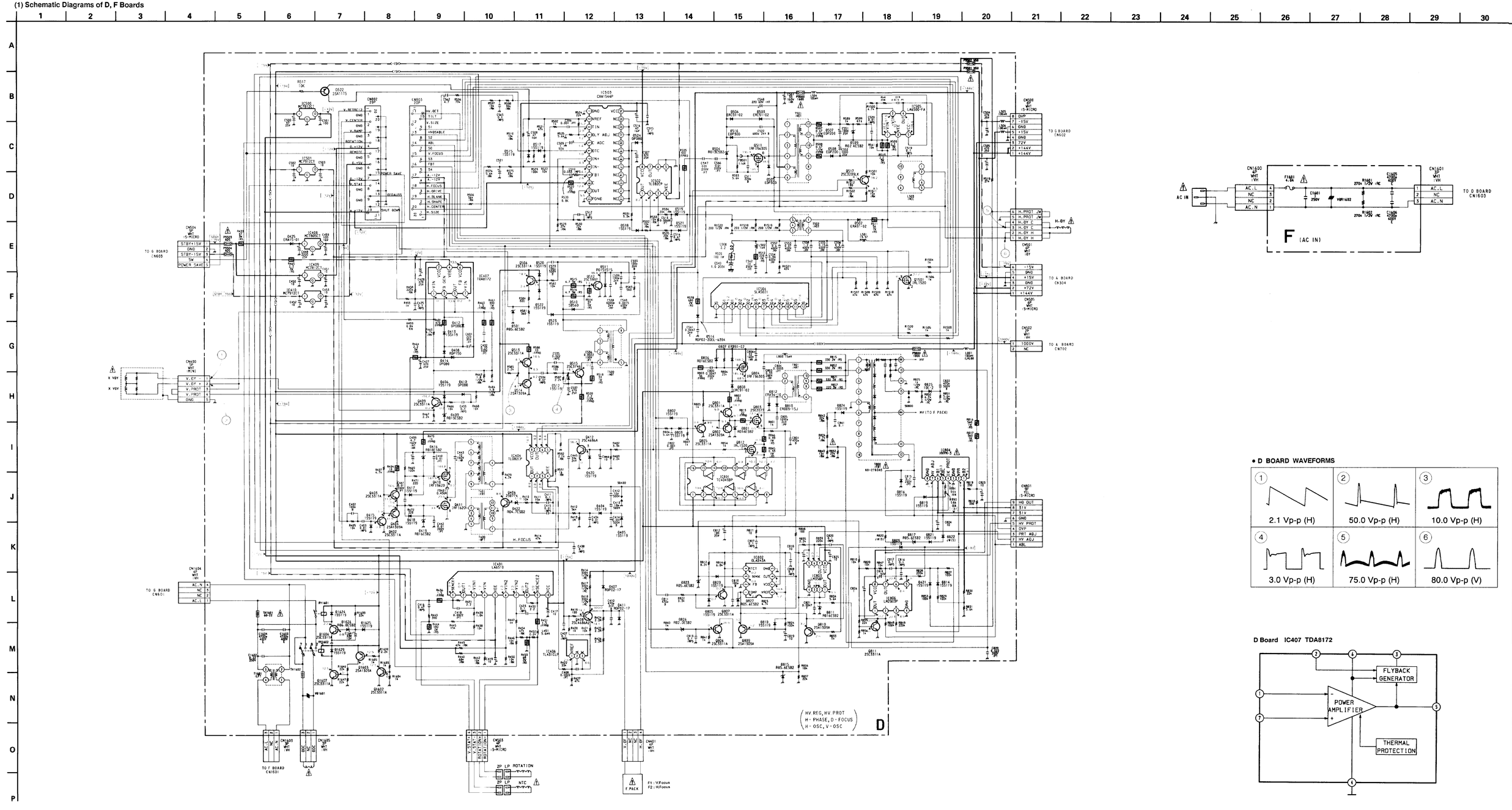
IC		DIODE			
IC401	B – 1	D404	G – 1	D813	D – 8
IC404	G – 1	D405	G – 2	D814	E – 6
IC406	F – 2	D406	A – 1	D815	F – 6
IC407	A – 3	D407	F – 3	D816	E – 7
IC408	B – 2	D408	A – 3	D817	E – 7
IC409	B – 3	D409	A – 1	D819	D – 7
IC410	B – 3	D410	A – 2	D820	D – 6
IC490	C – 2	D411	F – 3	D821	E – 7
IC491	C – 2	D412	A – 2	D823	D – 6
IC500	B – 4	D413	A – 3	D824	F – 6
IC501	B – 3	D414	A – 3	D825	G – 7
IC502	E – 1	D415	F – 1	D826	D – 3
IC503	C – 1	D416	F – 2	D827	D – 7
IC505	G – 3	D417	F – 2	D1624	C – 6
IC506	C – 3	D418	G – 1	D1625	B – 5
IC801	C – 7	D419	F – 1	D1626	B – 6
IC802	D – 6	D420	F – 2	D1629	B – 5
IC803	E – 6	D421	E – 6		
IC804	D – 7	D422	G – 1		
IC806	D – 6	D425	B – 2		
		D491	C – 2		
TRANSISTOR		D501	E – 1		
		D502	C – 5		
Q402	F – 1	D503	G – 4		
Q403	F – 1	D504	G – 4		
Q404	F – 1	D505	G – 5		
Q406	G – 2	D506	G – 4		
Q408	F – 3	D507	F – 5		
Q409	A – 1	D508	F – 4		
Q410	F – 2	D509	G 4		
Q411	F – 2	D510	F – 5		
Q412	F – 2	D511	G – 6		
Q506	F – 1	D512	D – 2		
Q511	G – 4	D514	E – 4		
Q512	G – 5	D515	D – 1		
Q513	D – 2	D516	G 5		
Q514	D – 2	D517	D – 1		
Q515	E – 3	D518	D – 1		
Q517	F – 1	D519	D – 2		
Q801	C – 8	D520	E – 1		
Q802	C – 8	D521	D – 1		
Q803	D – 8	D522	E – 1		
Q804	F – 7	D523	E – 3		
Q805	C – 7	D524	E – 1		
Q806	D – 3	D801	C – 8		
Q807	C – 6	D802	C – 7		
Q809	D – 7	D803	C – 7		
Q810	D – 7	D805	C – 6		
Q811	D – 6	D806	D – 7		
Q812	B – 8	D807	D – 8		
Q1501	D – 4	D808	E – 7		
Q1602	C – 3	D809	E – 6		
Q1603	C – 4	D810	D – 7		
Q1606	C – 6	D811	E – 6		
Q1607	B – 4	D812	D – 8		

GDM-17SE1

D [HV. REG, HV. PROT
H-PHASE, D-FOCUS
H-OSC, V-OSC]

– D Board –



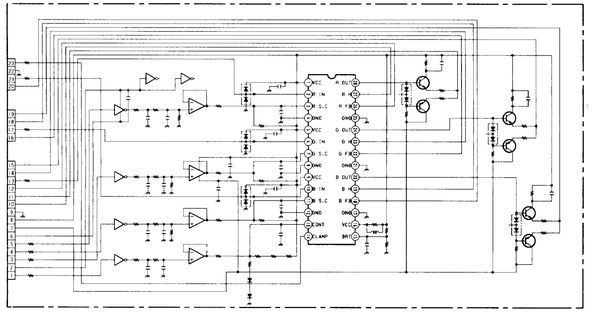


• D BOARD WAVEFORMS

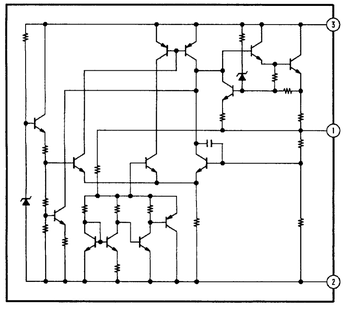
① 2.1 Vp-p (H)	② 50.0 Vp-p (H)	③ 10.0 Vp-p (H)
④ 3.0 Vp-p (H)	⑤ 75.0 Vp-p (H)	⑥ 80.0 Vp-p (V)

D Board IC407 TDA8172

A Board IC001 PRE-1

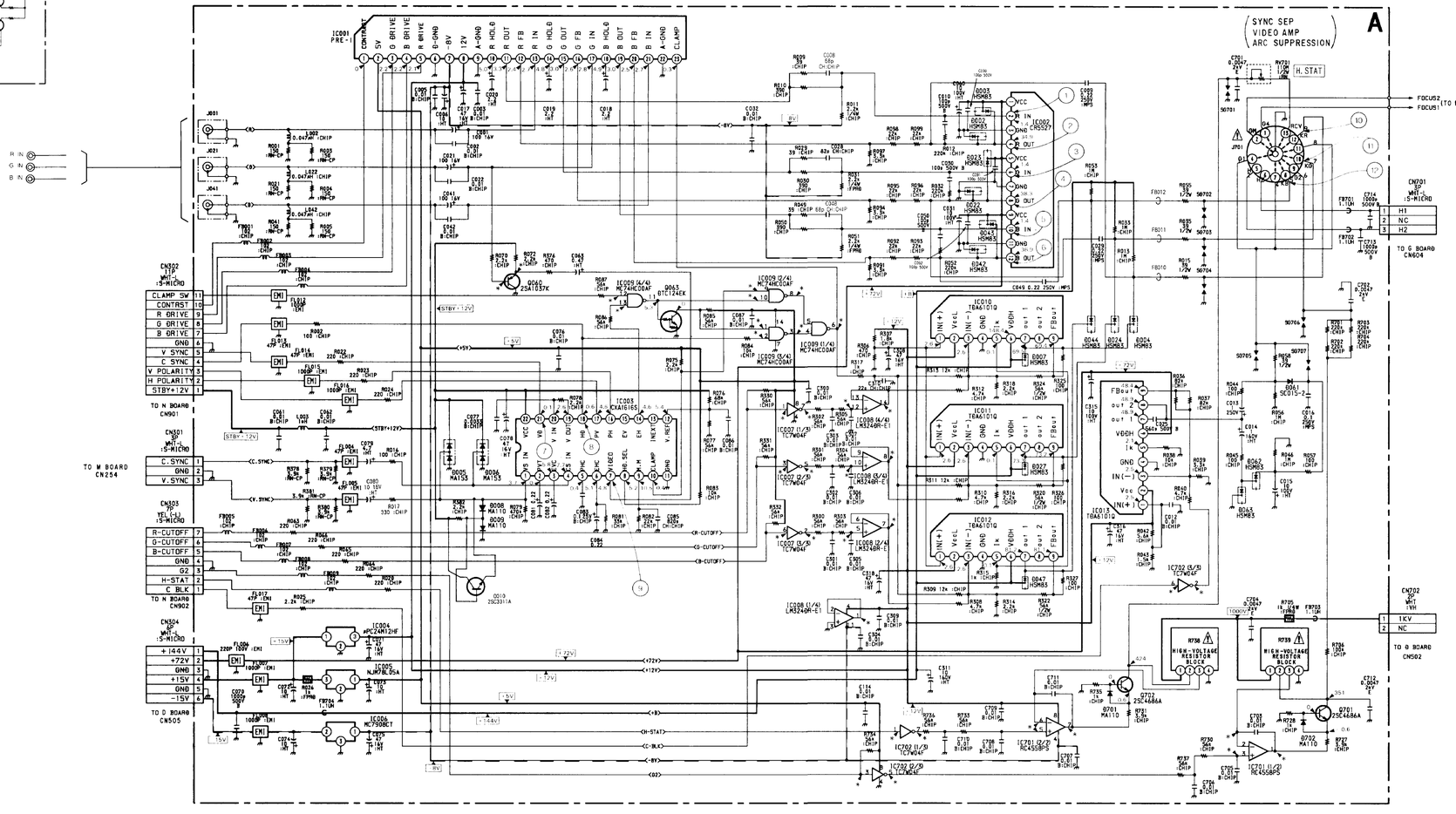


A Board IC005 NJM78L05A



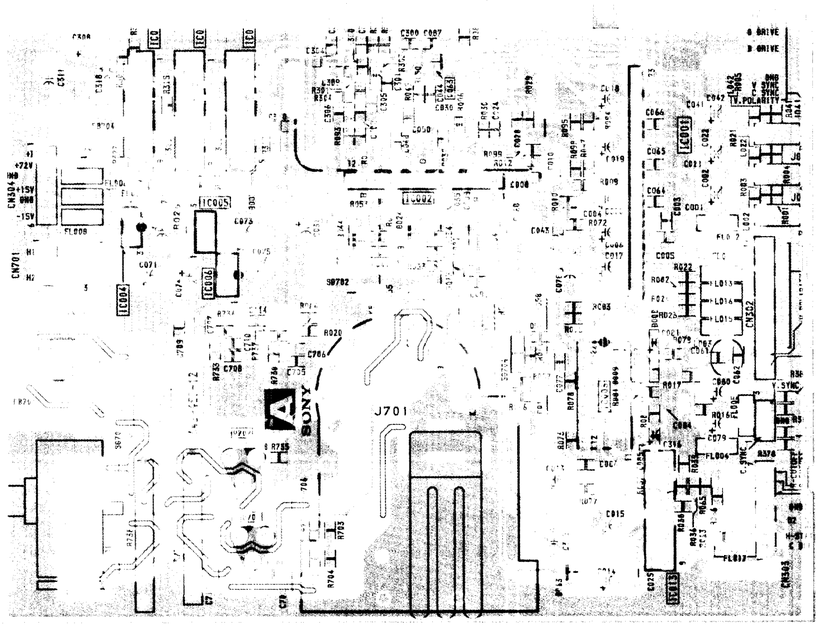
• A BOARD WAVEFORMS

① 1.0 Vp-p (H)	② 45.0 Vp-p (H)	③ 1.0 Vp-p (H)
④ 41.0 Vp-p (H)	⑤ 1.1 Vp-p (H)	⑥ 33.0 Vp-p (H)
⑦ 0.6 Vp-p (H)	⑧ 4.7 Vp-p (H)	⑨ 1.0 Vp-p (H)
⑩ 45.0 Vp-p (H)	⑪ 41.0 Vp-p (H)	⑫ 33.0 Vp-p (H)



A SYNC SEP
VIDEO AMP
ARC SUPPRESSION

A Board (Conductor Side)



• : Pattern of the rear side.

• A BOARD

IC

	(Conductor Side)		(Component Side)	
IC001	B	4	B	1
IC002	B	3	B	3
IC003	C	4		
IC004	B	1	B	4
IC005	B	2	B	4
IC006	B	2	B	4
IC007			A	3
IC008			A	3
IC009			A	3
IC010	A	2	A	4
IC011	A	2	A	4
IC012	A	1	A	4
IC013	C	4	C	1
IC701			B	4
IC702			B	4

TRANSISTOR

	(Conductor Side)		(Component Side)	
Q060			B	2
Q063	A	3		
Q701	C	2	C	4
Q702	C	2	C	4

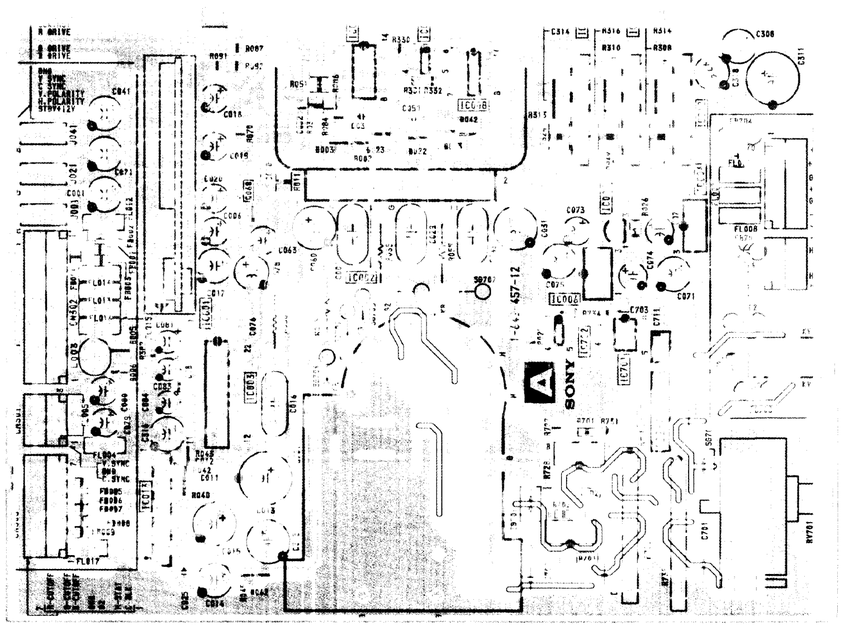
DIODE

	(Conductor Side)		(Component Side)	
D002			A	3
D003			A	2
D004	B	3		
D005			C	1
D006			C	1
D007	B	2		
D008	C	4		
D009	C	4		
D022			A	3
D023			A	3
D024	B	3		
D027	B	2		
D042			A	3
D043			A	3
D044	B	3		
D047	B	1		
D061	C	4		
D062			C	2
D063	C	4		
D701			C	4
D702			C	4

VARIABLE RESISTOR

	(Conductor Side)		(Component Side)	
RV701	C	1	C	5

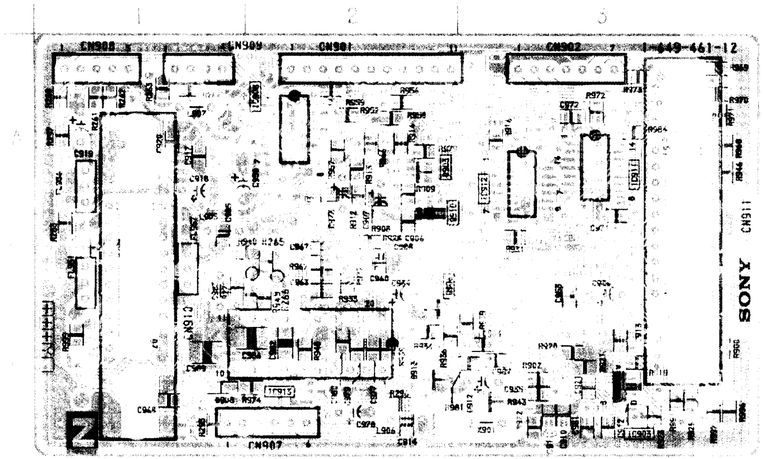
A Board (Component Side)



• : Pattern of the rear side.

N SYSTEM CONT E² PROM POWER SAVE

– N Board (Conductor Side) –



• : Pattern of the rear side.

• N BOARD

IC

	(Conductor Side)	(Component Side)
IC901		A - 1
IC902		A - 2
IC903	B - 3	
IC904		B - 1
IC905		A - 3
IC908	A - 2	
IC909		A - 3
IC911	A - 3	
IC912	A - 3	
IC913	B - 2	B - 2
IC914		B - 3

TRANSISTOR

	(Conductor Side)	(Component Side)
Q903	A - 2	
Q905		B - 2
Q906	B - 2	
Q907		B - 3
Q909		B - 2
Q910	A - 2	
Q912		B - 2

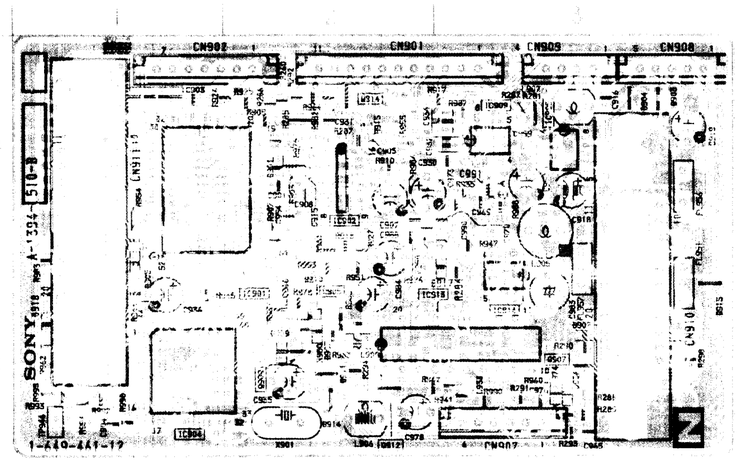
DIODE

	(Conductor Side)	(Component Side)
D901		A - 2
D902		B - 3
D903		A - 3
D904		A - 3
D905		B - 1
D906		B - 3
D907		B - 2
D908	B - 1	
D909		B - 2
D910		B - 2
D911		B - 2
D912	B - 3	
D913	B - 2	
D914		B - 2
D915		B - 3
D916		
D917		

CRYSTAL

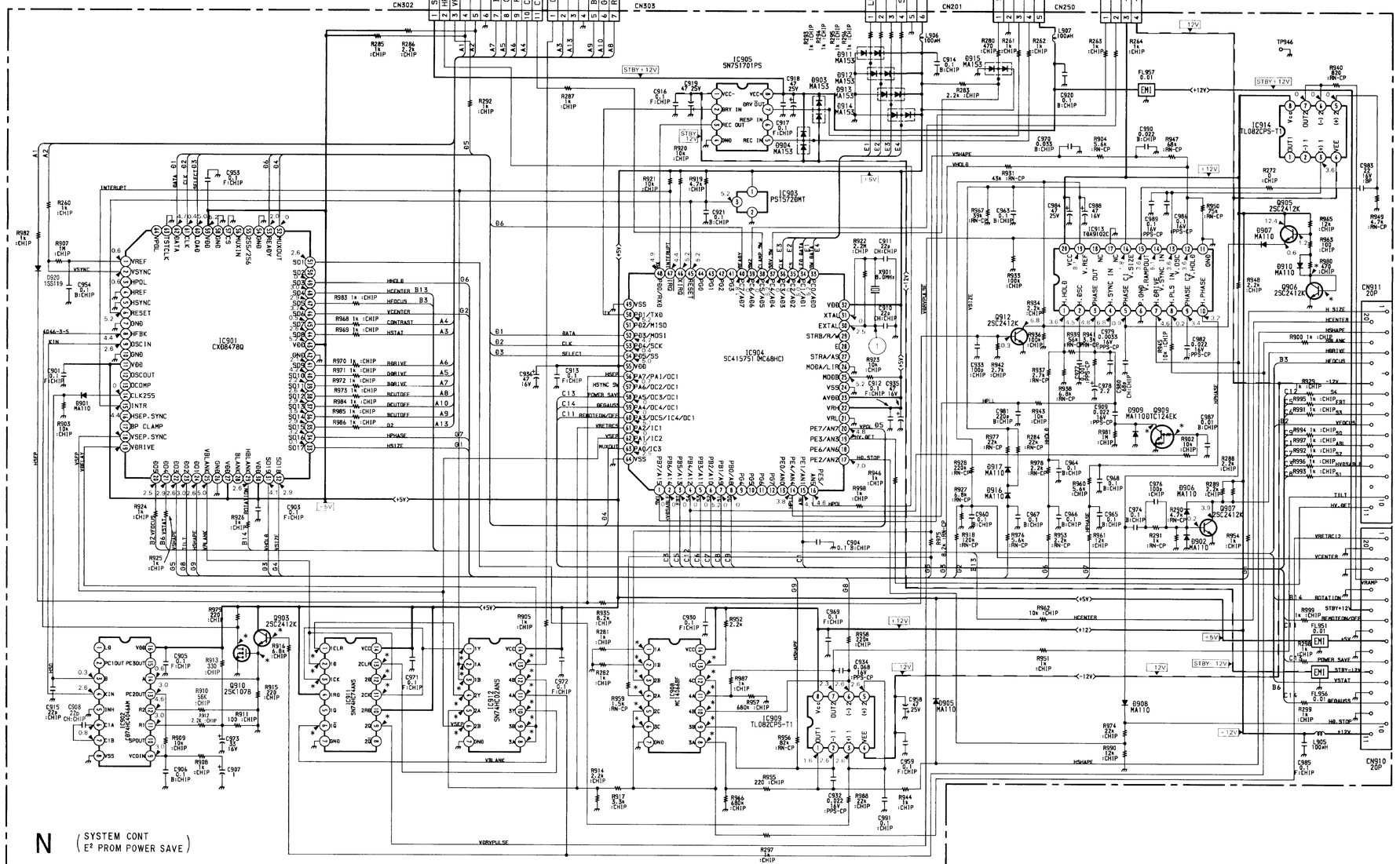
	(Conductor Side)	(Component Side)
X901	B - 3	B - 2

– N Board (Component Side) –



• : Pattern of the rear side.

(3) Schematic Diagram of N Board

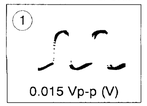


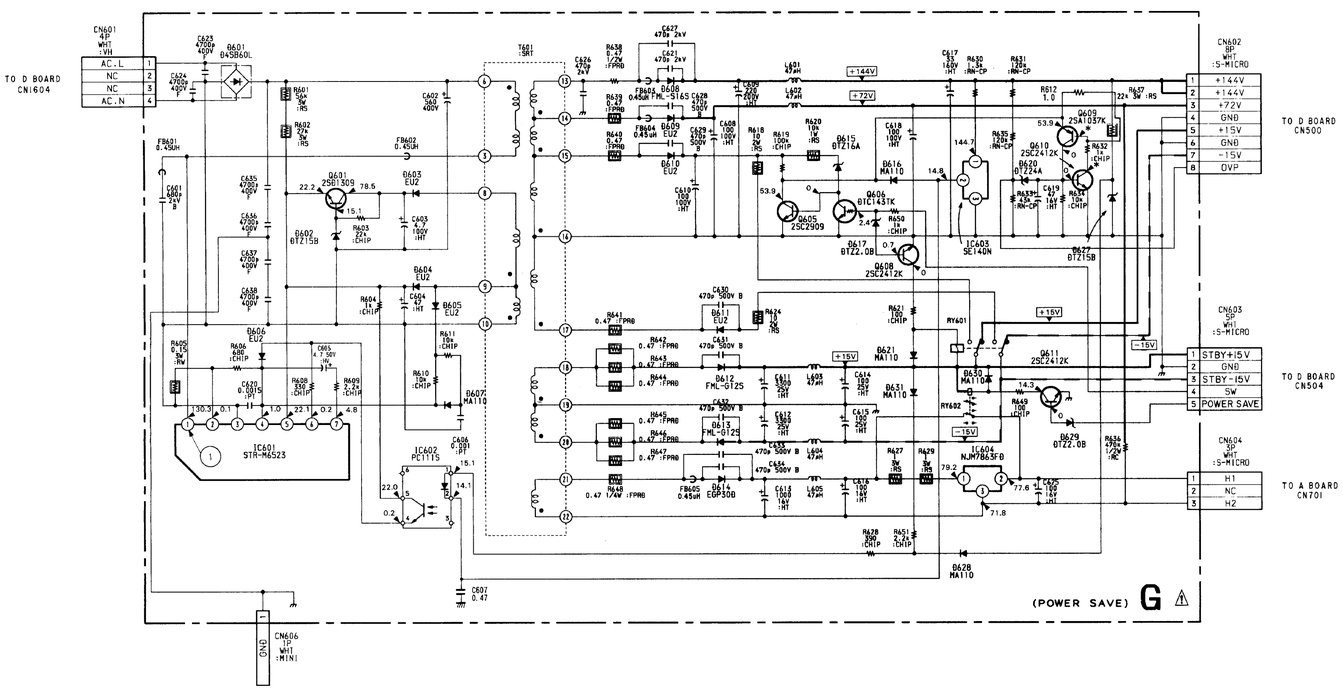
• N BOARD WAVEFORM

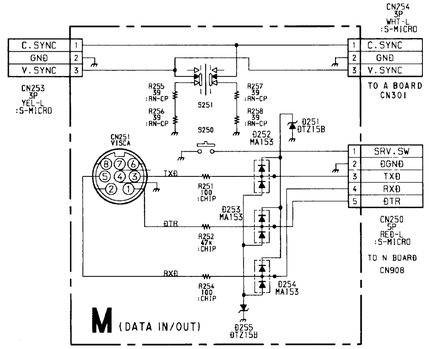
1

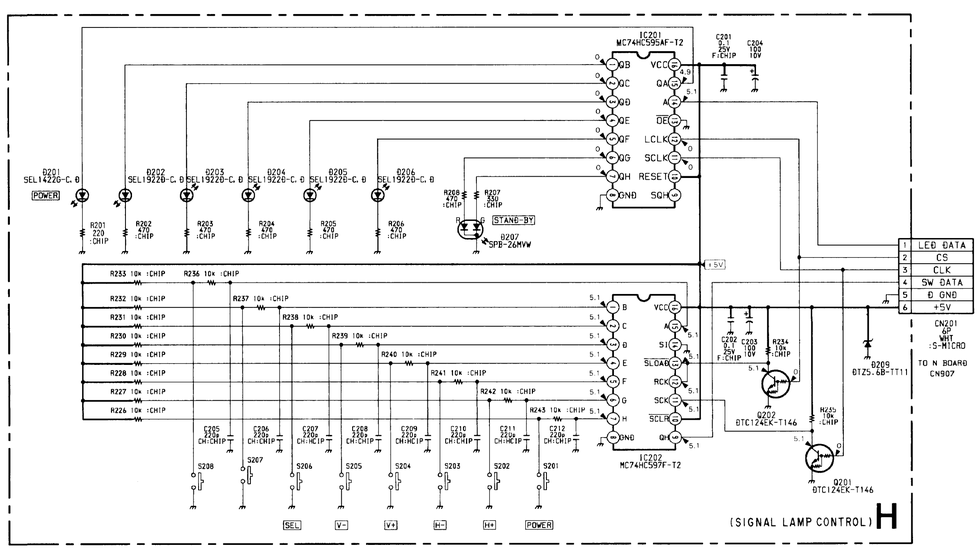
5.0 Vp-p (V)

• G BOARD WAVEFORM



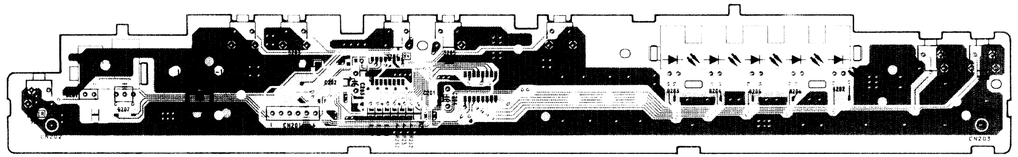




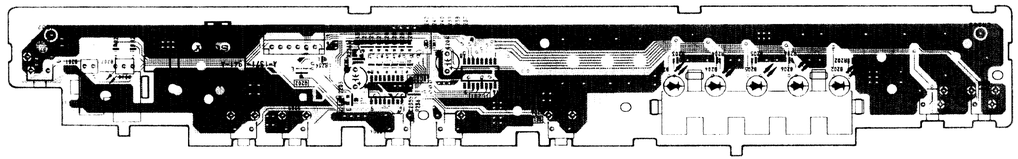


H [SIGNAL LAMP CONTROL] M [DATA IN/OUT]

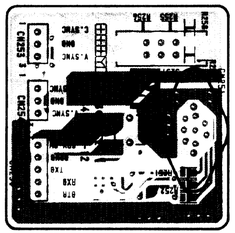
– H Board (Conductor Side) –



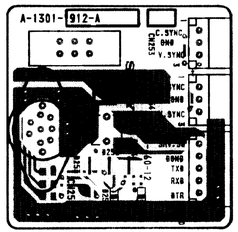
– H Board (Component Side) –



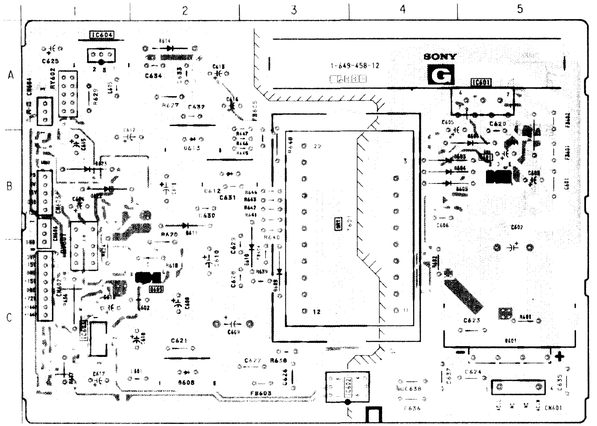
– M Board (Conductor Side) –



– M Board (Component Side) –



– G Board (Conductor Side) –



• : Pattern of the rear side.

G [POWER SAVE]

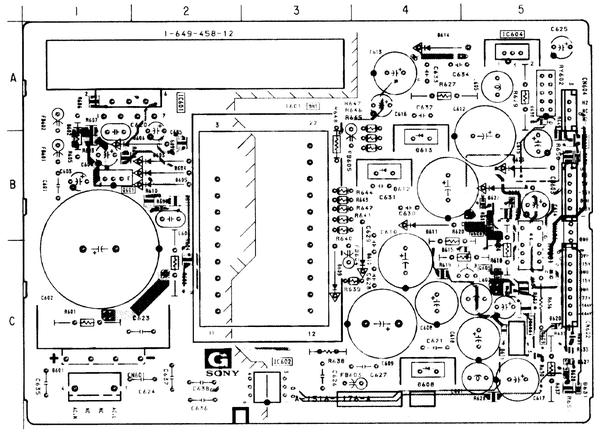
• G BOARD

IC	(Conductor Side)	(Component Side)
IC601	A – 5	A – 1
IC602	C – 3	C – 3
IC603	C – 1	C – 5
IC604	A – 1	A – 5

TRANSISTOR	(Conductor Side)	(Component Side)
Q601	B – 5	B – 1
Q605	C – 2	C – 5
Q606		C – 5
Q608		B – 5
Q609		C – 5
Q610		C – 5
Q611		B – 5

DIODE	(Conductor Side)	(Component Side)
D601	C – 5	C – 1
D602		A – 1
D603	B – 4	B – 2
D604	B – 4	B – 2
D605	B – 4	B – 2
D606	B – 5	B – 1
D607		B – 2
D608	C – 2	C – 4
D609	C – 3	C – 3
D610	C – 3	C – 4
D611	B – 2	B – 4
D612	B – 2	B – 4
D613	B – 2	B – 4
D614	A – 2	A – 4
D615		C – 5
D616		C – 5
D617		B – 5
D620		C – 5
D621		B – 5
D627		C – 5
D628		C – 5
D629		B – 5
D630		A – 5
D631		C – 5

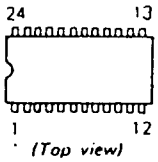
– G Board (Component Side) –



• : Pattern of the rear side.

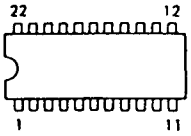
5-5. SEMICONDUCTORS

CXA1544P



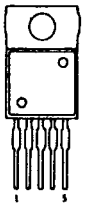
(Top view)

CXA1616S

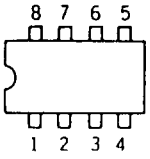


(Top view)

LA6500-FA

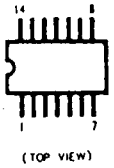


LM358P
LM2903DQ
LM2903P
SN751701PS-ELL2000
TL082ACP
TL082CP
μPC358C



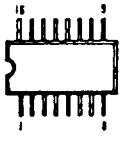
(Top view)

MC14066BF
MC74HC00AF
SN74HC02ANS



(TOP VIEW)

MC74HC595AF
MC74HC597F-T2



(TOP VIEW)

MC7805CT
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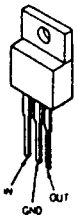
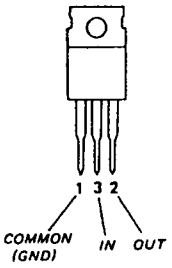


MC7908CT
MC7912CT
NJM79M08FA



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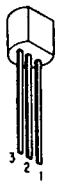
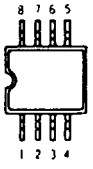
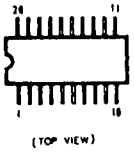


RC4558PS
TL082CPS
TL082M



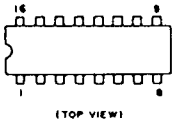
(TOP VIEW)

SN74HC74ANS



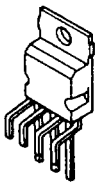
(TOP VIEW)

TC4049BP



(TOP VIEW)

TDA8172



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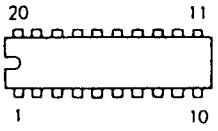
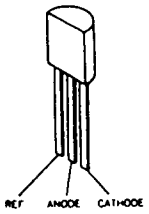
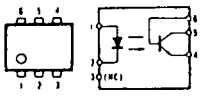


(Top view)

TL431CLP



PC111LS



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DTC143TK
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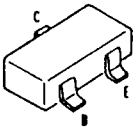
2SC2412K-QR



IRFPE40

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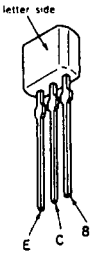
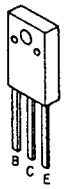
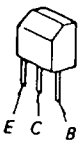
2SA1309A
2SC2785-HFE
2SC3311A



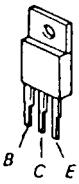
2SD1309



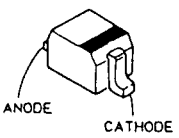
2SC3209LK
2SD774-34



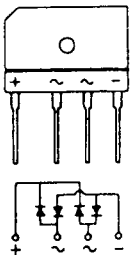
2SC3746



DTZ5.6B
MA110



D4SB60L



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ERA34-10
ERB91-02
EU-2
GP08D
HSM83
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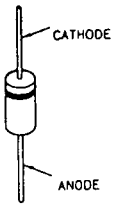
1SS83
10E2



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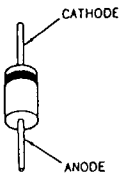
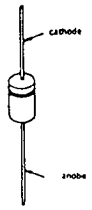
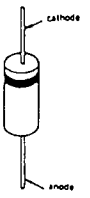
RGP02-17PKG23



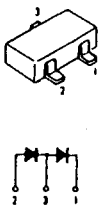
ERC91-02
RGP02-20EL-6394



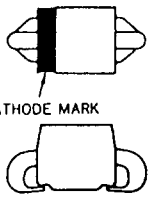
ERD09-15J



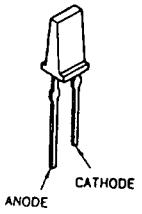
MA153
1SS226



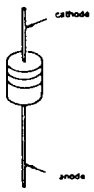
SC015-2



SEL1422G-C
SEL1922D-C

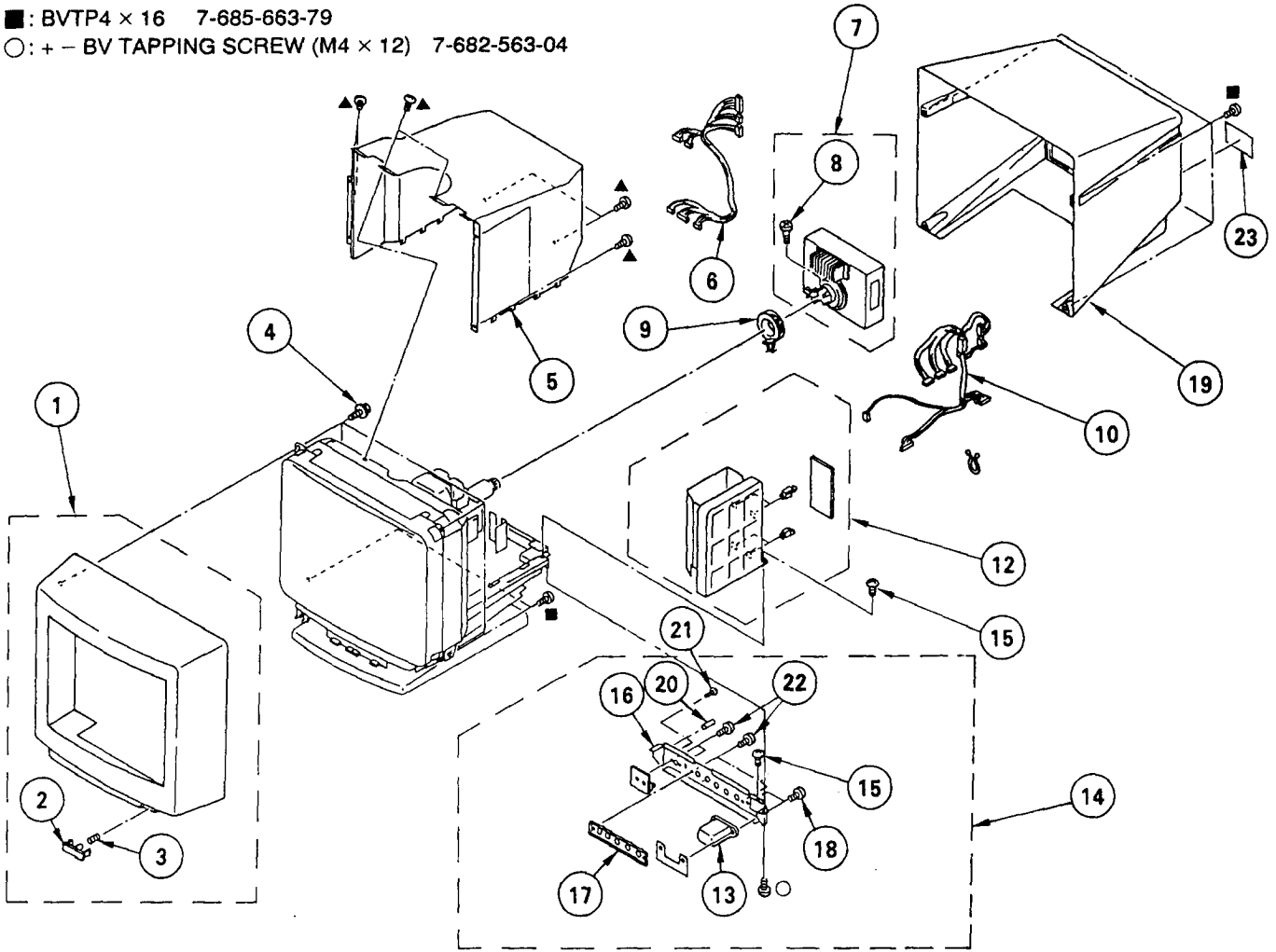


RD13ES-B2
RD16ES-B3
RD18ES-B2
RD2.0ES-B2
RD2.4ES-B2
RD4.7ES-B2
RD5.1ES-B2
RD5.6ES-B2
RD6.8ES-B2
1SS119



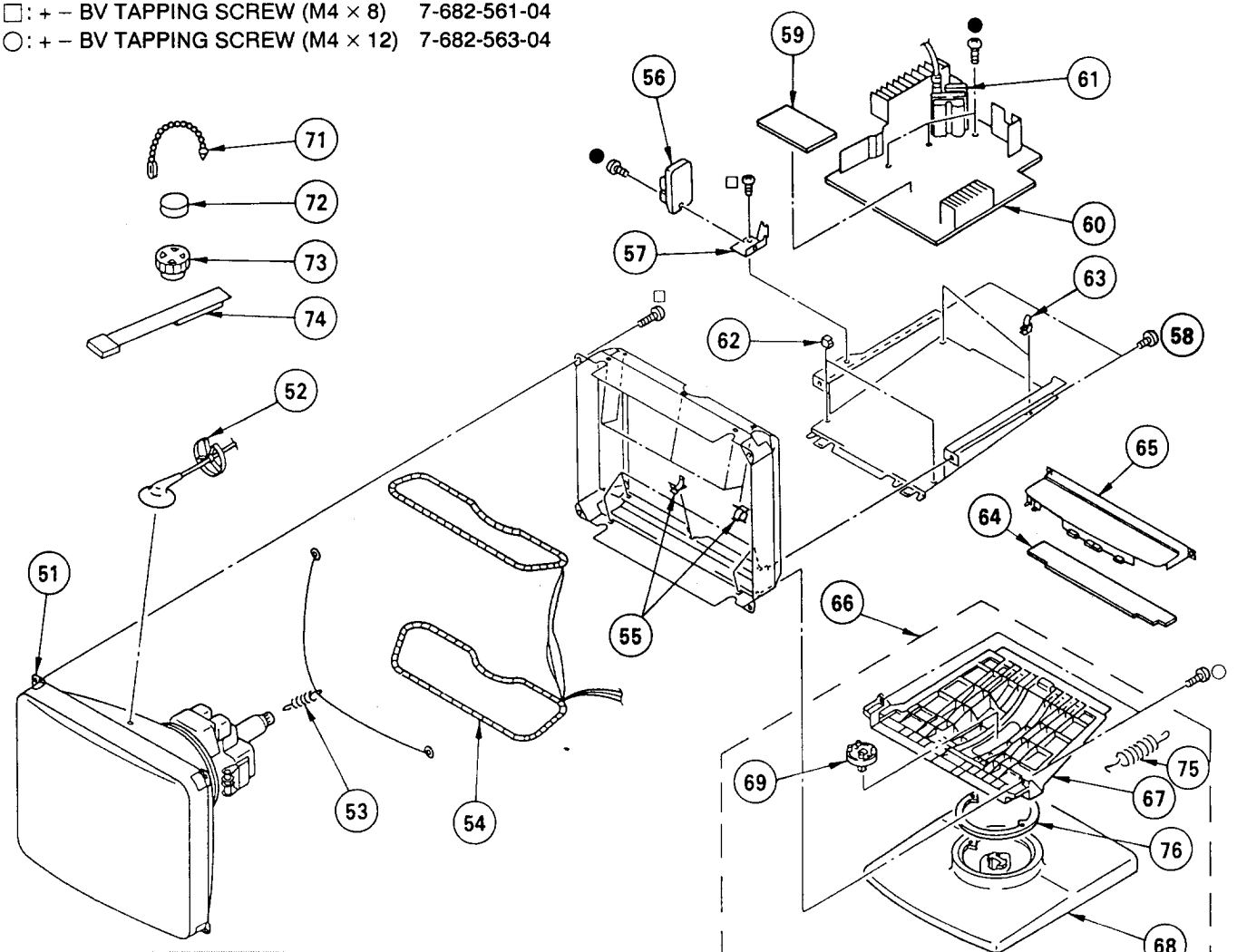
6-1. CHASSIS

▲: + – BV TAPPING SCREW (M4 × 8) 7-682-561-04
■: BVTP4 × 16 7-685-663-79
○: + – BV TAPPING SCREW (M4 × 12) 7-682-563-04



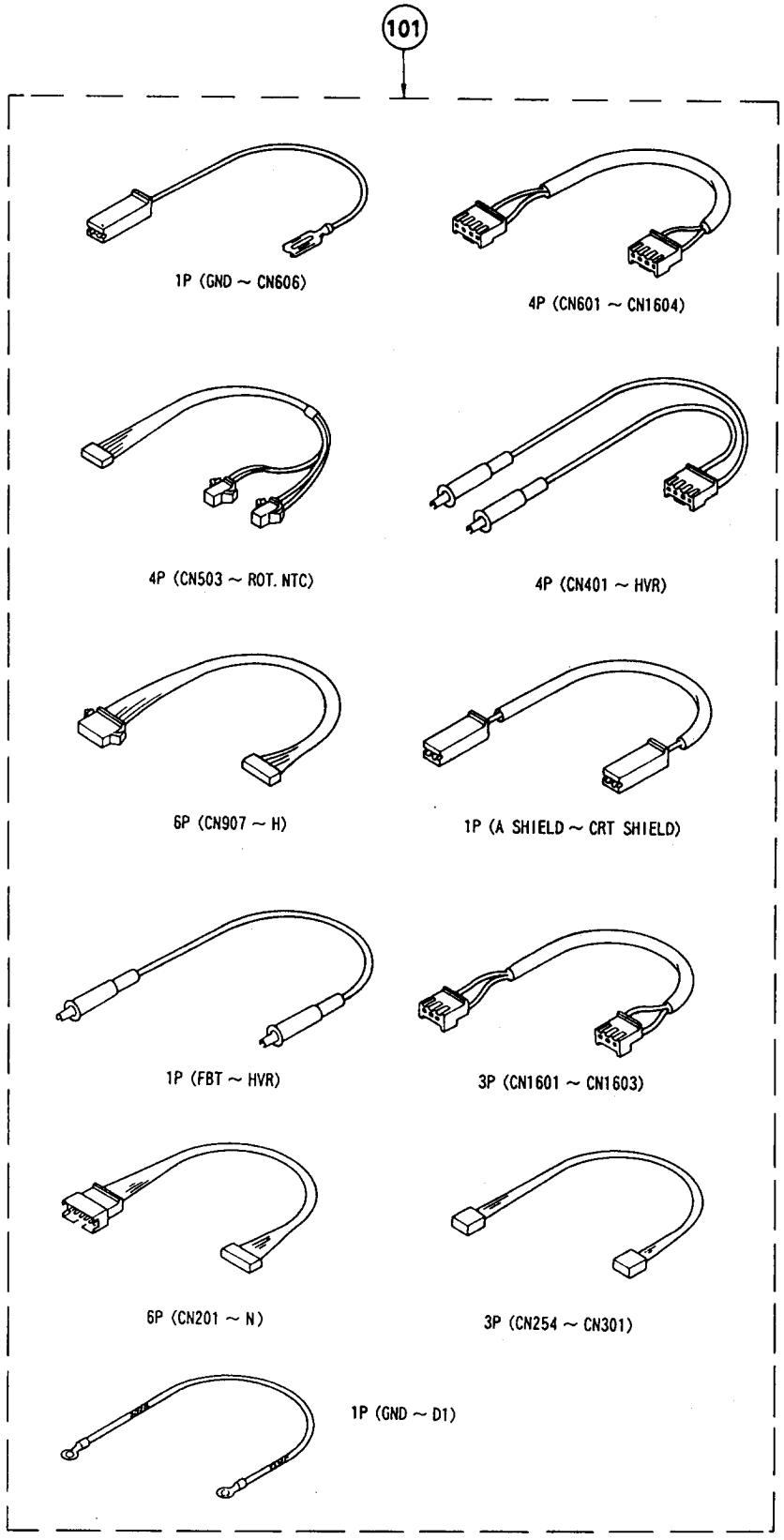
6-2. PICTURE TUBE

●: + – BV TAPPING SCREW (3 × 12) 7-685-648-79
□: + – BV TAPPING SCREW (M4 × 8) 7-682-561-04
○: + – BV TAPPING SCREW (M4 × 12) 7-682-563-04



The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

6-3. KIT


101
1P (GND ~ CN606)
4P (CN601 ~ CN1604)
4P (CN503 ~ ROT. NTC)
4P (CN401 ~ HVR)
6P (CN907 ~ H)
1P (A SHIELD ~ CRT SHIELD)
1P (FBT ~ HVR)
3P (CN1601 ~ CN1603)
6P (CN201 ~ N)
3P (CN254 ~ CN301)
1P (GND ~ D1)

6-4. ACCESSORIES AND PACKING MATERIALS